

PANEL ANALYSIS OF FEEDBACK-SEEKING PATTERNS IN FACE-TO-FACE, COMPUTER-MEDIATED, AND COMPUTER-GENERATED COMMUNICATION ENVIRONMENTS¹

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Summary.—This study extends 1993 work by Ang, *et al.* and provides a temporal assessment of feedback sign and feedback communication environments on feedback-seeking behavior of 72 subjects. Analysis indicated that positive feedback engendered greater subsequent seeking than negative feedback. Subjects in both computer-mediated and computer-generated feedback environments were more willing to seek feedback on the next immediate opportunity than to defer seeking to later occasions. In contrast, subjects in the face-to-face environment were more reticent in seeking feedback on the next available opportunity, preferring either to delay it to later occasions or not to seek feedback. We discuss the results in the context of face-loss costs and public-image implications of feedback-seeking behavior.

In a recent study, Ang, Cummings, Straub, and Earley (1993) examined feedback-seeking in the contexts of face-to-face communication and computer-buffered environments. Two types of computer-buffered environments were investigated, the computer-mediated feedback environment in which subjects sought feedback from a feedback giver via an electronic mail facility and the computer-generated feedback environment in which subjects sought feedback directly from a computer. The task was an in-basket exercise consisting of a consecutive series of 10 memoranda.² The Ang, *et al.* (1993) study showed that, when face-loss costs, defined as “risks involved in obtaining feedback” (Ashford & Cummings, 1983, p. 387), were reduced, subjects sought more feedback in both computer-mediated and computer-generated environments than in the face-to-face communication.

In this study, we conducted a panel analysis of the feedback sought at memo t and its effect on subsequent feedback-seeking behavior at memo $t+1$, $t+2$, $\geq t+3$, etc. across the three feedback-seeking environments. In this study, memo t indicates a memo at a specific point along the 10-memo sequence of the in-basket exercise. The feedback sought at memo t was analyzed by its sign (positive or negative). Given that negative feedback is more ego-inflicting than positive feedback and that negative feedback may poten-

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²In addition to the 10 memoranda, a separate sample memo, the first in the sequence, was designated as a practice memo.

tially create or reinforce an unfavorable image of the feedback seeker in the giver's mind, we postulated that subjects who received negative feedback would be deterred from seeking subsequent feedback or would defer seeking feedback more than those who received positive feedback.

METHOD³

Seventy-two students (39 men and 33 women) from the undergraduate management program at a midwestern, urban university participated in the experiments. The experimental task consisted of an "in-basket" exercise originally developed by Sandelands and Calder (1987). Subjects assumed the role of a manager who was required to respond to office memoranda found in a typical manager's in-basket.

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 appropriate answer to the multiple-choice question. After choosing an answer, subjects could either tackle the next memo without seeking feedback on the existing memo or request feedback on the current memo. Depending on the experimental treatments to which they were assigned, subjects could seek feedback in one of three environments, a face-to-face one in which subjects interacted face-to-face with Mr. Johnston, a confederate of the project who played the role of the feedback giver; a computer-mediated one in which subjects interacted with Mr. Johnston through an electronic mail facility;⁴ and a computer-generated one in which subjects sought feedback from a computer database. No limit was placed on the number of times subjects could seek feedback; the only restriction was that feedback on any one memo could only be requested once.

RESULTS

Table 1 shows the temporal pattern of feedback-seeking anchored upon the sign of feedback at memo t . Across all three feedback-seeking environments, the number of feedback episodes in which the feedback sought by subjects was negative was 189 while the number of episodes of positive feedback was 173. Subjects who received negative feedback were less inclined to seek subsequent feedback than subjects who received positive feedback. The average probability of a subject seeking feedback after receiving positive feedback was $157/173 = .91$ while the average probability of a subject seeking feedback after receiving negative feedback was $142/189 = .75$.

A chi-squared analysis showed that the pattern of seeking in memo $t + 1$, $t + 2$, $\geq t + 3$, and not seeking (*did not seek*) was significantly different

³Due to space constraints, we have provided only a brief description of the method. A more detailed description of the methodology can be found in the report by Ang, *et al.* (1993).

⁴In the computer-mediated feedback environment, subjects were led to believe that Mr. Johnston was providing feedback through an electronic mail facility. In reality, the electronic communication was a mock-up. A program written in Turbo Pascal simulated seekers' interaction with Mr. Johnston.

TABLE 1
 PANEL ANALYSIS OF FEEDBACK-SEEKING PATTERNS

Feedback	Σ	Seeking at Memo				
		$t+1$	$t+2$	$\geq t+3$	Did not seek	
Positive at Memo t	173	f	114	26	17	16
		p	.66	.15	.10	.09
Negative at Memo t	189	f	98	28	16	47
		p	.52	.15	.08	.25

between conditions in which the feedback sought at memo t was positive or negative ($\chi_1^2 = 15.87, p < .05$). Thus, subjects were more inclined to seek subsequent feedback when feedback at memo t was positive than when this feedback was negative. In fact, upon receiving positive feedback, subjects were more likely to seek feedback on the next immediate memo ($p_{t+1} = .66$) than to defer it to subsequent memoranda ($p_{t+2} = .15; p_{\geq t+3} = .10$) or not seek feedback at all ($p_{did\ not\ seek} = .09$). In contrast, upon receiving negative feedback, subjects adopted either of two strategies of seeking feedback on the next immediate memo ($p_{t+1} = .52$) or did not seek feedback at all ($p_{did\ not\ seek} = .25$). Deferring feedback-seeking to $t+2$ or $\geq t+3$ were not prominent strategies ($p_{t+2} = .15$; and $p_{\geq t+3} = .08$).

TABLE 2
 PANEL ANALYSIS OF FEEDBACK-SEEKING BEHAVIOR IN FACE-TO-FACE,
 COMPUTER-MEDIATED, AND COMPUTER-GENERATED ENVIRONMENTS

Feedback and Seeking Environment	Σ	Seeking at Memo				
		$t+1$	$t+2$	$\geq t+3$	Did not seek	
Feedback Positive at Memo t						
Face-to-face	33	f	5	10	11	7
		p	.15	.30	.33	.21
Computer-mediated	50	f	34	14	4	8
		p	.68	.28	.08	.20
Computer-generated	90	f	75	4	3	8
		p	.83	.04	.03	.09
Feedback Negative at Memo t						
Face-to-face	36	f	10	6	7	13
		p	.28	.17	.19	.36
Computer-mediated	59	f	26	9	9	13
		p	.46	.16	.16	.23
Computer-generated	96	f	65	13	1	17
		p	.68	.14	.01	.18

Table 2 shows the patterns of feedback-seeking in each of the three environments. The values suggest that subjects sought more feedback in the computer-generated environment than in computer-mediated or face-to-face environments. Chi-squared analyses comparing the probability of seeking at

memo $t+1$, $t+2$, and $\geq t+3$ in the computer-generated environment with the probabilities of seeking for the other two environments showed that the patterns of feedback-seeking between computer-generated and face-to-face environments were significantly different ($\chi_2^2 = 9.06$, $p < .05$) whereas the patterns of feedback-seeking between computer-generated and computer-mediated environments were not significantly different ($\chi_1^2 = 4.02$, $p > .05$). It appears that subjects in the face-to-face environment showed greater reticence than subjects in either of the computer-mediated and computer-generated environments in seeking feedback via the next immediate memo. This is reflected in the lower probabilities of seeking feedback at $t+1$ (.15 and .28 versus .68 and .46 in the computer-mediated environment, with .83 and .68 in the computer-generated environment).

Figs. 1a and 1b depict the patterns of seeking feedback in the three feedback environments under conditions when feedback was positive at memo t and when feedback was negative at memo t . Patterns of feedback-

Probability of Seeking Feedback

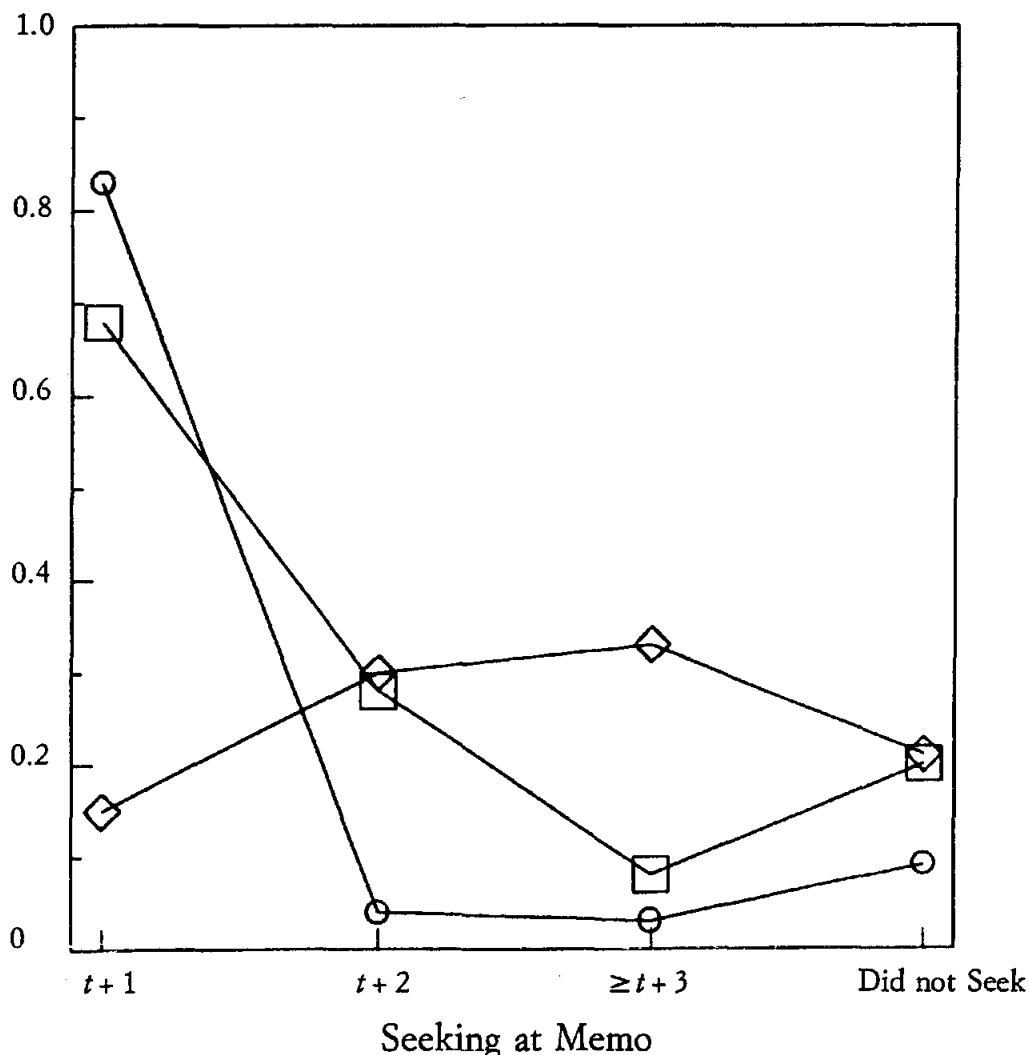


FIG. 1a. Pattern of feedback-seeking when feedback is positive: Face-to-face (◇), Computer-mediated (□), Computer-generated (○)

seeking in computer-mediated feedback and computer-generated feedback environments are consistent with the hypotheses elaborated in Ang, *et al.* (1993). Specifically, in the computer-generated environment where social contextual cues are absent and anonymity of the seekers retained, subjects were more inclined to seek feedback on the next immediate opportunity, with very low probability of deferring feedback-seeking or avoiding seeking feedback altogether even in the face of negative feedback. The pattern of feedback-seeking in the computer-mediated environment was similar to that of the computer-generated environment with the exception that the magnitude of feedback-seeking was relatively lower in the computer-mediated than those in the computer-generated environment.

Probability of Seeking Feedback

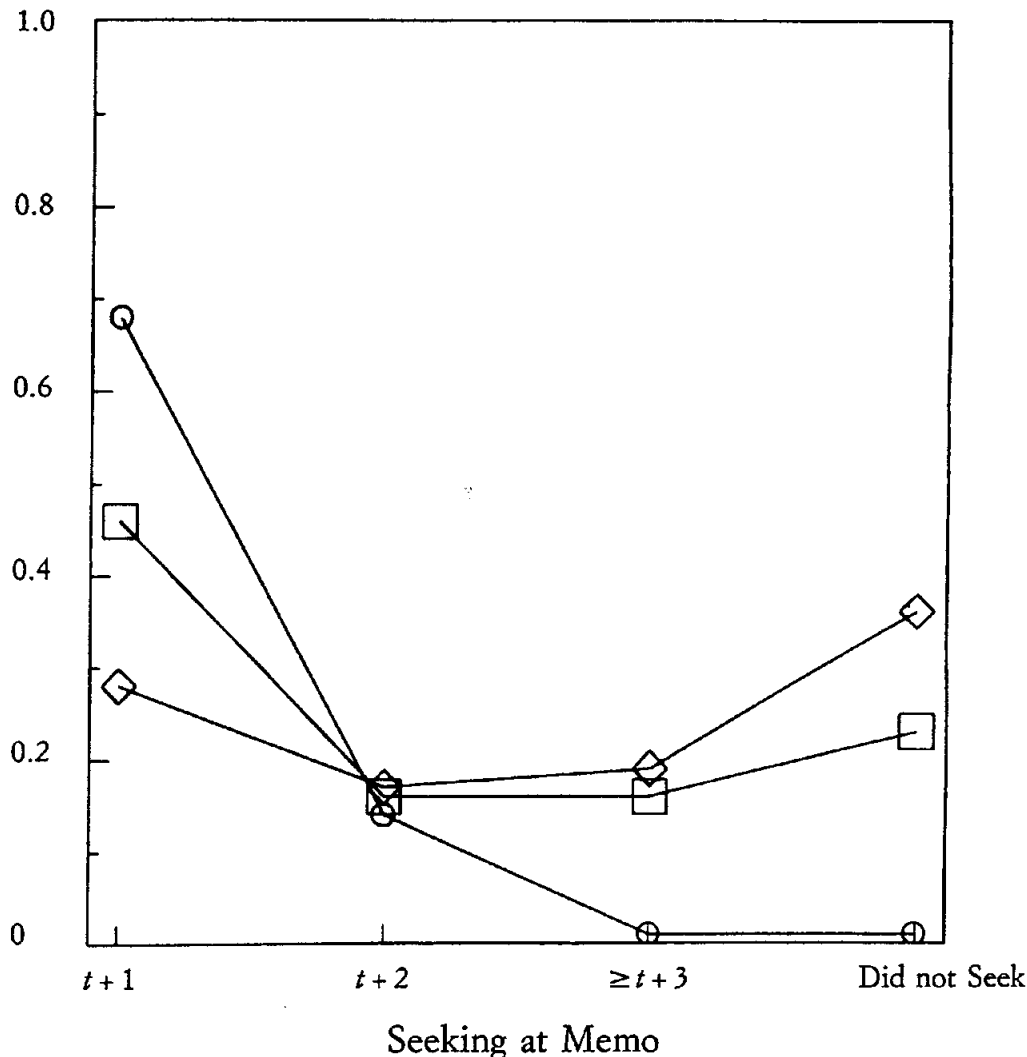


FIG. 1b. Pattern of feedback-seeking when feedback is negative: Face-to-face (◇), Computer-mediated (□), Computer-generated (○)

In the case of the face-to-face environment, the pattern of feedback-seeking indicates an opposite trend: subjects in the positive feedback condition sought less than those in the negative feedback condition, i.e., 5 or

15% in positive versus 10 or 28% in negative. One explanation is that, in any feedback-seeking episode where the encounter between the source and the seeker is interpersonal in nature, the risks involved in obtaining feedback may become more complex. As argued in Morrison and Bies (1991), the public image of the seeker can be improved or damaged depending on the valence or sign of the feedback. For example, Higgins and McCann (1984) found that delivering negative feedback to a subordinate leads supervisors to acquire a less favorable impression of that person while Larson and Skolnick (1982) found that supervisors held more favorable impressions of their subordinates' performance after delivering favorable performance feedback. Subjects in the face-to-face environment may have sought immediate feedback (at $t + 1$) more frequently when feedback (at t) was negative than positive to restore their public image with the feedback giver. Especially when subjects believe that feedback received at $t + 1$ may be positive, they will be more eager to seek feedback on the next immediate opportunity to reduce or rectify the damage to their public image caused by the negative feedback on memo t .

DISCUSSION

The Ang, *et al.* (1993) study showed that subjects were more likely to seek feedback in a computer-mediated environment than in a face-to-face environment and more likely to seek feedback in a computer-generated environment than a computer-mediated environment. In this study, we extended the analysis and found that feedback-seeking environments and sign of feedback have significant and differential effects on subjects' longitudinal patterns of feedback-seeking behavior. Positive feedback tended to induce greater subsequent seeking than negative feedback. Moreover, subjects in both the computer-mediated and computer-generated environments were more inclined to seek subsequent feedback immediately than those in the face-to-face environment. An unexpected finding was that, in the face-to-face environment, subjects who had just received negative feedback were more inclined to seek feedback on the next available opportunity than those who had just received positive feedback. We have explained this finding in terms of the need of subjects who had just received negative feedback to restore their public image with the human evaluator, the feedback giver.

This is the first study we know in which feedback-seeking has been examined on a temporal sequential basis. Such an examination is important because, in most organizational contexts, feedback-seeking is characterized more as a process in which a series of seeking episodes occur over time than as an isolated incident. A dynamic enquiry into the process of feedback-seeking is necessary to capture the contextual complexity of seeking behavior as an ongoing activity rather than as a discrete phenomenon.

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