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Determinants of Feedback-Seeking Behaviors

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ABSTRACT

DETERMINANTS OF FEEDBACK-SEEKING BEHAVIORS

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The purpose of the present research was to evaluate the effects of the level of task difficulty, the value of the goal, and the amount of effort required to obtain feedback on the frequency of feedback-seeking behaviors (FSB). The design was a 2 (task difficulty) x 2 (goal value) x 2 (effort) x 3 (day) mixed model analysis of variance. Eighty undergraduates were randomly assigned to one of eight experimental conditions. Each participant played a computerized stock market game for three "days". Three types of referent feedback and three types of appraisal feedback were available. The results indicated that more feedback-seeking was undertaken when the effort required to obtain the feedback was low. High goal value did not increase the amount of feedback-seeking. Participants sought more feedback under the low task difficulty condition, which was counter to that hypothesized. The interpretation of these results and suggestions for future research are discussed.

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I. INTRODUCTION

In the work context, feedback is information received about past behaviors that indicates the adequacy and appropriateness of those behaviors (Ilgen, Fisher, & Taylor, 1979). Feedback serves to reduce uncertainty about what is required on the job, how to perform tasks, and how performance is evaluated. It can provide cues as to the relative importance of various goals and to the probabilities of attaining such goals. It allows the individual to gain perspectives regarding which goals are desired by the organization and the best manner in which to achieve these goals (Ashford & Cummings, 1983).

Feedback can be gathered from a variety of sources, including supervisors, co-workers, self (i.e., personal thoughts and feelings concerning task performance), and performance of the task (Greller & Herold, 1975). Feedback can also be given in a variety of ways, ranging from a pat on the back to a written report outlining the appropriateness and usefulness of behaviors.

Much research has focused on characteristics of the recipient, source, and message of the feedback. The effectiveness of feedback has been shown to depend on recipient characteristics such as personality type (Ilgen et al., 1979; Stone, Guetal, & McIntosh, 1984), level of self-esteem (Ilgen et al., 1979), performance level (Hobson, 1986; Fisher, 1979; Matsui, Okada, & Inoshita, 1983; Matsui, Kakuyama, & Uy Onglatco, 1987; Quinn & Farr, 1989), and motivation

(Ashford & Cummings, 1983; Ashford, 1986). The effectiveness of feedback also depends on source characteristics such as who provides the feedback (Hanser & Muchinsky, 1978; Greller & Herold, 1975; Greller, 1980) and the credibility of that source (Ilgen et al., 1979; Bannister, 1986). Further, message characteristics such as the sign and sequence of feedback (Stone et al., 1984; Ilgen et al., 1979; Bernstein & Lecomte, 1979; Fletcher & Williams, 1976; Pearce & Porter, 1986; Barron, 1988) as well as its frequency (Ilgen et al., 1979) also impact the effectiveness of the feedback.

Not much attention has been given to the proposition that the recipient is an active participant in the feedback process. Although the employee has historically been viewed as a passive recipient of information relative to the organization's goals of enhancing performance and motivation, the employee can also be viewed as an active seeker of information relative to personal goals (Ashford & Cummings, 1983). When an employee faces uncertainty in the work environment, the need for clarifying information will drive the motivation to seek feedback. Feedback serves to reduce uncertainty by telling the recipient how to perform behaviors and how they are judged. In uncertain situations, the employee will be motivated to engage in feedback-seeking behaviors (FSB) such as monitoring the work environment and direct inquiry in order to gain clarifying information.

Monitoring entails attending to and collecting information from the work environment (e.g., supervisor, co-workers, self, task) in order to gain information

necessary for the attainment of goals. Direct inquiry requires the individual to ask relevant others for information concerning performance or behavior (Ashford & Cummings, 1983).

From monitoring and direct inquiry, the individual can gather two types of feedback: appraisal and referent. Appraisal feedback tells the worker how well he or she is performing on the task. Referent feedback provides information that suggests ways the worker can improve future performance (Ashford & Cummings, 1983; Greller & Herold, 1975; Hanser & Muchinsky, 1978).

The purpose of the present research is to evaluate the effects of three variables on the amount of feedback gathered when performing in a task environment that only allows a monitoring strategy. The three variables investigated are goal value, the amount of effort required to obtain feedback, and task difficulty. Each of these variables will be discussed in the following section. The specific hypotheses examined in this research will follow their respective literature reviews.

Feedback-Seeking Research

Despite the theoretical and common-sense appeals for the importance of FSB, relatively little research has been conducted to explore its nature. Research has focused on (a) variables that affect the amount of FSB (i.e., goal value, costs, task difficulty, tenure, feedback usefulness), (b) supervisory behaviors associated with FSB, and (c) the effect of FSB on performance. Because of the paucity of research on FSB, the research concerning supervisory reactions and performance

will be discussed in a later section even though it is not directly relevant to the present research.

Goal value. Much of the benefit of feedback is gained from its ability to provide information necessary for attaining valued goals. The goals held by an individual can shape the feedback-seeking process by indicating what feedback is needed, what feedback is useful, and where to obtain such feedback (i.e., supervisors, co-workers, self, and task). Ashford and Cummings (1983) assert that individuals who have goals that they value and who do not have enough information to attain those goals will actively seek more feedback compared to those individuals who do not have valued goals or who currently possess enough information to attain their goals.

Hypothesis 1. Participants who value the goal highly will seek feedback more frequently than those who place little value on the goal.

Costs. The costs associated with obtaining feedback can also influence the amount of FSB and the method (i.e., monitoring or direct inquiry) used to seek that feedback. There are three primary costs associated with seeking feedback: effort costs, face-loss costs, and inference costs. Effort costs refer to the amount of effort required to gather feedback information. Face-loss costs refer to the self-esteem risks associated with gathering feedback information. Inference costs refer to the amount and type of interpretation required in obtaining and understanding the feedback (Ashford & Cummings, 1983).

If the effort, face-loss, or inference costs are high, individuals will not be motivated to engage in FSB as frequently as when these costs are low. Furthermore, individuals will first engage in strategies with lower costs, and move to strategies with higher costs only if the low-cost strategies do not convey adequate information. As such, individuals will probably use a monitoring strategy first because of the higher costs associated with the direct inquiry strategy (Ashford & Cummings, 1983).

Direct inquiry is a public event that allows others to interpret interpersonal and verbal skills and opens the individual to the conjecture of others as to the "real" purpose of the inquiry. For example, a supervisor could interpret an inquiry as the inability of the individual to work independently, or as a sincere attempt to become a better performer. Peers could interpret an inquiry as an attempt to "get in good" with the boss. Because direct inquiry is a public event, it has a higher potential for face-loss than simply monitoring the work environment. The greater the perceived face-loss costs, the less direct inquiry will be used to gather feedback information (Ashford & Cummings, 1983).

Direct inquiry also has effort costs associated with it. The amount of effort required will vary with the accessibility of relevant others, the degree of knowledge that others have of the behavior in question, the complexity of the behavior, and the difficulty in obtaining the feedback (Ashford & Cummings, 1983). Individuals will turn to a monitoring strategy for information when the effort required to obtain the feedback is great.

Direct inquiry also has inference costs. The recipient must decide on the motives and feelings of the source when feedback is given. The decision alternatives include: Does the feedback reflect the "true" feelings of the source, or is the source trying to be "nice" to me? Thus, the more the individual desires to receive accurate information, and the more the recipient trusts the source, the more direct inquiry will be used (Ashford & Cummings, 1983).

While monitoring appears to be the least costly method, it too may require effort and have inference costs. In an ambiguous or complex situation, the individual could be required to monitor over a long period of time or to monitor many individuals in order to gather consensual information. In such cases, direct inquiry may be the best feedback-seeking strategy.

In addition, when using a monitoring strategy, the individual must make an evaluation based on what is seen or heard in the work environment and risk many interpretive errors in the process. It is possible that the individual may misread the feedback and come to an inaccurate conclusion concerning the information. Consequently, when accurate information is extremely important, the individual should engage in direct inquiry even though this strategy requires greater effort and risks ego damage.

Hypothesis 2: Participants will seek feedback more frequently when the effort costs are low for obtaining that feedback than when the effort costs are high.

Job complexity. Feedback allows an individual to decrease the uncertainty associated with the level of their performance and how to improve it (Ashford & Cummings, 1983). In jobs that are relatively simple and have clearly defined job requirements, individuals will tend to engage in less FSB because the feedback has little value to them. In jobs that are complex and have ambiguous job requirements, individuals will engage in FSB more frequently to help them clarify the level of their performance and plan strategies to improve it.

Hypothesis 3: Participants who perform a more difficult task will seek feedback more frequently than those who perform a less difficult task.

Tenure. Job and organizational tenure can also affect the amount of FSB. Ashford and Cummings (1985) found that those individuals who had little organizational tenure reported engaging in more FSB. Since individuals who are new to the job or organization may not have a firm grasp on roles, expectations, and standards for effective task performance, it is thought that these individuals engage in more FSB than more tenured individuals (Ashford, 1986).

Usefulness of feedback. The amount of feedback-seeking is also thought to be influenced by the usefulness of the feedback the individual has received previously. If the individual has found feedback-seeking to yield useful information in the past, then FSB might be expected to increase (Ashford, 1986).

Feedback value. Ashford (1986) found that employees who valued feedback reported that they engaged in FSB more often than those who did not. This relationship between reports of FSB and the perceived value of feedback was

moderated by the organizational tenure of employees. Those employees with greater organizational tenure valued feedback as much as new employees, but they reported seeking feedback less often. Knowledge of the job and organization may have decreased the frequency of feedback-seeking behaviors of tenured individuals, but it is possible that social expectations inhibited these tenured individuals from seeking feedback. Tenured individuals may have felt that it was inappropriate to ask questions and exhibit a lack of knowledge.

Personality variables. Ashford (1986) found a positive relationship between degree of self-confidence and use of monitoring as a feedback-seeking strategy. No relationship was found for direct inquiry. It was suggested that employees with high self-esteem seek information concerning how well they are performing (i.e., appraisal feedback), while employees with low self-esteem seek information on what and how to perform (i.e., referent feedback), thus minimizing potential ego damage.

An individual's ability to tolerate ambiguity can moderate the relationship that job ambiguity has with FSB. Ashford and Cummings (1985) found that individuals who could tolerate ambiguity did not experience the need for active FSB when faced with an ambiguous job.

Other Feedback-Seeking Research

Supervisory reactions. Farr and his associates have studied the reactions of supervisors to subordinate FSB. For example, Farr, Schwartz, Quinn, and Kittner (1989) looked at the effects of FSB and subordinate performance level on

supervisory evaluations and attributions of performance and motivation. Supervisors were asked to rate subordinate performance on an assembly task while the supervisors also completed an in-basket exercise. No differences were found between supervisory ratings of the ability or overall performance of high and low feedback-seeking subordinates. High feedback seekers were perceived as more interested in the task and more concerned about task performance, but less able to work independently. Thus, while a supervisor may view high FSB as indicating a highly motivated subordinate, the supervisor may also view it as indicating an inability to work independently. Unfortunately, these latter perceptions could influence supervisor-subordinate relations and reduce the amount of direct inquiry that is used by the subordinate to gain feedback (Ashford & Cummings, 1983).

Quinn and Farr (1989) studied the effects of subordinate performance level, FSB, and gender on the amount, type, and sign of feedback delivered by the supervisor. Supervisors were found to deliver more referent than appraisal feedback and more positive than negative feedback. Furthermore, more informal and referent feedback were delivered to low performers than high performers. More informal appraisal feedback and informal positive feedback were given to high feedback-seeking subordinates than to low feedback-seeking subordinates. Also, more informal appraisal and positive feedback were delivered to high feedback-seeking female subordinates than to low feedback-seeking female subordinates. Female supervisors delivered more informal feedback to low

performing, high feedback-seeking subordinates than to high performing, high feedback-seeking subordinates. In contrast, male supervisors delivered more informal feedback to low feedback-seeking males than to high feedback-seeking males.

Performance. Morrison and Weldon (1990) studied the effects of setting an assigned goal on FSB and performance. Participants were asked to generate as many uses as possible for a knife and box. Two 8-minute trials were given. At the end of trial 1, half of the participants were given feedback concerning their performance and were assigned a difficult, yet attainable goal. The other participants were not given performance feedback and no mention of goal-setting was made. Feedback-seeking behavior was defined as the number of times a participant stopped to count the number of uses they had produced for the knife and box.

The results indicated that participants were more likely to count the number of uses for the knife and box (i.e., engage in feedback-seeking behavior) when a performance goal was assigned. Participants who sought feedback while working towards an assigned goal performed significantly better than those who did not seek feedback and did not have an assigned performance goal. These results support Ashford and Cumming's (1983) proposition that feedback is sought because it can be used in the attainment of goals.

One limitation of the research by Morrison and Weldon (1990) is the low difficulty level of the task. Individuals can develop very efficient strategies for this

brainstorming task without receiving additional training or additional information about the task. As such, the effect of FSB on performance needs to be studied further with tasks of a more difficult nature.

Summary

Feedback is a complex construct. Many variables influence its effectiveness and the extent to which it is sought. Historically, feedback has been viewed as an organizational resource used to increase the performance and motivation level of employees. Feedback can also be viewed as a resource of the individual to assist in the attainment of valued goals. As Ashford and Cummings (1983) maintain, employees are not just passive recipients of feedback, but are also active seekers of information concerning goals that they value. Employees can gather performance feedback through monitoring the work environment or directly by asking relevant others. The method chosen will depend upon the perceived face-loss, effort, and inference costs involved in obtaining the feedback.

The amount of feedback-seeking is thought to be influenced by the value of goals held, the difficulty of the task, the success of previous feedback-seeking behaviors, length of job and organizational tenure, and the effort, face-loss, and inference costs associated with obtaining the feedback. In sum, if (a) goal value is high; (b) task difficulty is high; (c) previous feedback-seeking has been successful; (d) length of employment is short; (e) familiarity with the task is minimal; and (f) costs are low, individuals will undertake feedback-seeking more frequently and perform better.

This research will examine the influence of task difficulty, goal value, and the effort required to obtain feedback on the amount of FSB, using a task that only allows participants to gather feedback using a monitoring strategy.

II. METHOD

Participants

Eighty people participated in the research. They were recruited from undergraduate classes at Old Dominion University and were given extra credit points for their participation. Seventy percent were female and the average age was 21.1 years.

Design

The three independent variables in this research were task difficulty, effort required to receive feedback, and goal value. There were two levels (high/low) associated with each independent variable, and participants continued the task for three "days" (three 15-minute sessions). The design was a 2 (task difficulty) x 2 (effort) x 2 (goal value) x 3 (day) mixed model analysis of variance with task difficulty, effort, and goal value as the between-subjects variables and day as the repeated measure.

The dependent variables were the amount of referent and appraisal feedback sought daily, the overall amount of feedback sought daily (referent and appraisal combined), and daily task performance (the dollar amount gained or lost). Three types of referent feedback and three types of appraisal feedback were available to participants. The appraisal feedback was an index of the

participant's performance, and the referent feedback provided information that the participant could use to plan strategies to improve performance.

Information was also gathered on self-esteem, tolerance of ambiguity, self-efficacy, and initial goal value in order to explore whether these variables were related to the dependent variables and could serve as covariate measures. Self-efficacy is a judgment of "how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p.122). Self-efficacy is thought to affect the individual's value of a goal by influencing the amount of effort expended on a goal and the amount of persistence shown when faced with obstacles (Bandura, 1977).

Task

A computerized stock market game was created and used in this research. The object of the game was to make money through the buying and selling of various shares of stock. Each participant was given $265,000 in cash plus 500 shares of six different stocks worth a total of $135,000. Thus, each participant's net worth at the beginning of the game was $400,000. No constraints were placed on the participants as to which stocks they could purchase or what amounts they could spend. The main computer screen displayed to all participants provided the names of the stocks, current prices, and a menu listing the different options for action as well as the time and day of play. Appendix A contains a pictorial representation of the main screen for the low and high effort conditions.

The game was played for three "days" with each day lasting 15 minutes. The schedule for each day was from 8 a.m. to 1 p.m. with the stock market open from 9 a.m. to 1 p.m. Participants were able to buy and sell stocks only when the market was open, and stock prices changed continuously while the market was open. Participants were able to gather feedback throughout the day including when the market was closed. Specifics of the feedback are explained in a later section.

Procedure

Upon arrival, participants were told that they would be testing a new teaching tool concerning the stock market. The participants then completed a pre-experimental questionnaire measuring tolerance of ambiguity and self-esteem. Upon completion of the questionnaire, the participants were given training on how to play the game. All participants were told their net worth (i.e., $400,000), given a description of the feedback choices available to them, shown how to use the menu associated with each type of feedback, and shown how to buy and sell stocks. Participants were also told the duration of the game and when stocks could be bought and sold. Each participant completed a 10-minute training game in order to become familiar with the computer operations. The training session lasted approximately 20 minutes. Appendix B contains the training materials.

The game was then played for 45 minutes (three 15-minute "days" with a two to five minute break between "days"). During the game, participants were allowed to gather feedback whenever they desired.

An experimental questionnaire was administered at the end of day 1 to assess goal value and self-efficacy. At the end of day 3, a post-experimental questionnaire was administered to assess the adequacy of the task difficulty, effort required to obtain feedback, and goal value manipulations. A full debriefing was given upon completion of the post-experimental questionnaire that included an explanation of the purpose of the experiment.

Experimental manipulations

In the high task difficulty condition, 15 stocks were presented with an equal number from the airline, banking, and retail industries. The pattern of performance of one stock from each industry was predictable over time. The performance of the remaining 12 stocks fluctuated randomly. During training, participants were only shown examples of the different feedback choices; they were not told how to use the information. Further, the three referent feedback screens did not provide "change in stock price" information. Participants were told during the training that the game was considered difficult by previous participants.

In the low task difficulty condition, nine stocks were presented with an equal number from the three industries. The performance of all stocks was predictable over time. Two of the stocks from each industry steadily increased in value, while one steadily decreased. During training, participants were shown examples of all the feedback available to them and they were told how to use this information to improve performance (i.e., to identify short- and long-term trends

in stock prices). Furthermore, information regarding "change in stock price" was presented and participants were told that the game was considered easy by previous participants.

In the high effort condition, participants were required to complete a multi-step procedure in order to receive feedback from the computer. Participants were asked three times whether they were sure they wanted to complete an action. The three actions were: (1) to gather feedback; (2) to gather feedback concerning the stocks or their performance; and (3) to decide the specific type of feedback to gather. When they wanted to complete one of the three actions, they were instructed to type a three-letter nonsense code exactly as it was presented (i.e., Pdb, DpB, Bpd). If they did not type the code correctly, the computer immediately went back to the main screen, where the process began again. In the low effort condition, all feedback screens were assigned to a function key and the participants only had to press the appropriate function key in order to receive the feedback.

The goal that was set for the goal value conditions depended upon performance in the difficulty conditions. A pilot study was used to determine the mean scores for each difficulty condition. For the low goal value conditions, the goal amount was ten times the mean score achieved under the particular (i.e., high or low) difficulty condition. For the high goal value conditions, the amount was set at the mean score achieved for the particular difficulty condition.

Participants in the high goal value and low difficulty condition were told to increase their net worth by $17,800, while participants in the high goal value and high difficulty condition were assigned a goal of $4,300. Participants were told that the goal was difficult but realistic and that it was based on the performance of persons who had participated previously.

Participants in the low goal value and low difficulty condition were told to increase their net worth by $178,000, while those in the low goal value and high difficulty condition were given a goal of $43,000. Both of these amounts were ten times the amounts set for the respective high goal value conditions. Low goal value participants were not given a rationale for the goal, and they were told that the goal had been perceived as unrealistic by previous participants.

All participants were given information indicating their progress toward the goal. This information was in the form of a reference amount, and it indicated how much money the participant should have gained at that point in order to achieve the goal. Participants in the high goal value condition were told that the reference amount was not absolute and that they should not be concerned if they were behind the reference amount. Low goal value condition participants were told that the reference amount indicated progress toward the goal and that if they were $1,000 or more behind the reference amount, they would probably not achieve the goal.

Measures

The pre-experimental questionnaire contained 16 questions concerning tolerance of ambiguity and level of self-esteem. The 6 ambiguity questions were extracted from Norton (1986). The 10 self-esteem questions were taken from Rosenberg (1965). All 16 questions required responding to a 9-point Likert-type scale, ranging from strongly disagree to strongly agree. Appendix C contains a copy of the pre-experimental questionnaire.

The experimental questionnaire concerning goal value and self-efficacy was administered at the end of day 1 (the first of the three 15-minute sessions). The self-efficacy questions were based on guidelines given by Bandura (1986) and Locke and Latham (1990). Participants chose values between zero and 100 percent to indicate how confident they were that they could achieve specific amounts of money by the end of the game. Bandura (1986) suggests that ratings of self-efficacy should be made after individuals have received feedback regarding performance, and this was the reason for administering the questions at the end of Day 1.

The three goal value questions were from a 9-item goal commitment questionnaire developed by Hollenbeck and Klein (1987). It was thought that participants who valued the goal would be committed to attaining the goal. Conversely, participants who did not value the goal would not be committed to attaining it. Thus, high goal commitment signifies high goal value and low goal commitment signifies low goal value. The questions were administered at the end

of day 1 in order to allow participants enough time and task experience to make realistic judgments of the attainability of the goal, and thus the value of the goal. Responses to these questions were obtained on a 9-point Likert-type scale, ranging from strongly disagree to strongly agree.

Additional questions were asked concerning the ease of using the menus, readability of the menus, and teaching effectiveness of the task. These additional questions were intended to be distractor questions, so that goal value would not be an overly salient topic especially for those persons in the low goal value condition. Appendix D contains a copy of this questionnaire.

Upon completion of the game, participants were given a 13-item post-experimental questionnaire measuring their perceptions of the difficulty of the task (6 questions), the amount of effort required to obtain feedback (4 questions), and goal value (3 questions). The goal value questions were the same questions used in the experimental questionnaire. All responses were based on a 9-point Likert-type scale, ranging from strongly disagree to strongly agree. A copy of this questionnaire is contained in Appendix E.

Feedback

The appraisal feedback included the amount of cash on hand, the amount gained or lost that "day" (daily gain/loss), and the amount gained or lost since beginning the game (overall gain/loss). The referent feedback included stock history, industry history, and an overall summary of stock price changes (summary

to date). A detailed explanation of the information provided by each of these feedback choices follows.

The cash on hand screen provided information about the amount of cash currently held, the value of stocks currently owned, and current net worth (i.e., the sum of cash on hand and stock value). The daily gain/loss screen provided information on the current cash gain or loss for the day along with the reference amount. The overall gain/loss screen was identical to the daily gain/loss screen except that it provided the information for overall performance. Appendix F contains a pictorial representation of the appraisal feedback screens.

The stock history screen provided the high and low prices for the last 52 weeks and for the previous day, the stock value at the end of the previous day, and the overall "change in price". The industry history screen included the same information, except that it was presented for the industry as opposed to the individual stocks. The "change in price" information for these screens was only provided to participants in the low difficulty condition.

The summary to date screen provided information on the high and low prices for each stock since the beginning of the game as well as the current stock price. Appendix G contains a pictorial representation of the referent feedback screens.

Dependent Measures

The dependent variables included the amount of referent and appraisal feedback sought daily, the overall amount of feedback sought daily, and the net

gain or loss for each day. Each time a participant used one of the referent feedback screens (i.e., stock history, industry history, or summary to date), it was counted as one behavioral unit of referent feedback-seeking. Appraisal feedback-seeking was measured in the same manner. Each time one of these screens (i.e., cash on hand, daily gain/loss, or gain/loss to date) was used, it was counted as one behavioral unit of appraisal feedback-seeking.

The overall amount of feedback sought daily was calculated as the total number of times the referent and appraisal feedback screens were used each day. The performance measure was the gain or loss for the day.

III. RESULTS

Overview

The results of this research are presented in three sections. First, analyses related to the reliability of scales and manipulation checks are presented. Next, the correlational analyses of the personality measures and the dependent variables are examined. Finally, results of the mixed model analysis of variance (ANOVA) for the feedback and performance variables are discussed. The implications of the ANOVA for specific research hypotheses will be discussed where appropriate.

Scale Reliabilities

Reliability analyses were performed using the average of the within-experimental condition correlations (McIntyre, 1990) for each of the seven scales covered in the experimental questionnaires (i.e., tolerance of ambiguity, level of self-esteem, self-efficacy, day 1 goal value, task difficulty, level of effort required, and post-task goal value). Because the reliability for the day 1 goal value scale was not acceptable (Cronbach's alpha = .23), it was not used in any subsequent analyses. The reliabilities for the remaining scales were acceptable. Alphas ranged from .65 for tolerance of ambiguity and post-task goal value to .89 for self-efficacy. Table 1 presents the reliability coefficients for each of the seven scales.

Manipulation Checks

A 2 (difficulty level) x 2 (effort level) x 2 (goal value) between-subjects analysis of variance (ANOVA) was conducted to check the adequacy of each

Table 1

Reliability Coefficients of the Scales

Scale	Alpha	# Questions
Tolerance of ambiguity	.65	6
Self-esteem	.88	10
Self-efficacy	.89	6
Day 1 goal value	.23	3
Task difficulty	.72	6
Effort required	.85	4
Post-task goal value	.65	3

experimental manipulation. Dependent variables were the participants' ratings of task difficulty, effort required to obtain feedback, and value of the goal. Variance components (Vaughan & Corballis, 1969) and intraclass correlation coefficients were also computed to compare the amounts of variance accounted for by the sources of variation.

As shown in Tables 2, 3, and 4, the appropriate main effect for each analysis was significant (i.e., task difficulty: $F(1,72) = 38.41, p < .05$; level of effort required: $F(1,72) = 67.86, p < .05$; and goal value: $F(1,72) = 38.08\ p < .05$). All means were in the appropriate direction indicating that the

Table 2

Sources of Variation for the Task Difficulty Manipulation

Source of Variance	df	MS	F-ratio	VC	ICC
Difficulty (D)	1	2431.01	38.41*	29.60	.32
Effort (E)	1	177.01	2.80	1.42	.02
Goal value (G)	1	2.81	.04	-.76	.00
D x E	1	32.51	.51	-.38	.00
D x G	1	21.01	.33	-.53	.00
E x G	1	1.51	.02	-.77	.00
D x E x G	1	.31	.01	-.79	.00
Error	72	63.29		63.29	

Note. Negative variance components were assigned an intraclass correlation of zero, however, negative variance components were included in the denominator to compute intraclass correlation coefficients. VC = Variance component; ICC = Intraclass correlation coefficient.

* $p<.05$.

Table 3

Sources of Variation for the Effort Level Manipulation

Source of Variance	df	MS	F-ratio	VC	ICC
Difficulty (D)	1	168.20	3.83*	1.55	.02
Effort (E)	1	2976.80	67.86*	36.66	.44
Goal value (G)	1	80.00	1.82	.45	.01
D x E	1	68.45	1.56	.31	.00
D x G	1	151.25	3.45	1.34	.02
E x G	1	.45	.01	-.54	.00
D x E x G	1	.20	.01	-.55	.00
Error	72	43.87		43.87	

Note. Negative variance components were assigned an intraclass correlation of zero, however, negative variance components were included in the denominator to compute intraclass correlation coefficients. VC = Variance component; ICC = Intraclass correlation coefficient.

* $p<.05$.

Table 4

Sources of Variation for the Goal Value Manipulation

Source of Variance	df	MS	F-ratio	VC	ICC
Difficulty (D)	1	10.51	.52	-.12	.00
Effort (E)	1	7.81	.38	-.16	.00
Goal value (G)	1	775.01	38.08*	9.43	.31
D x E	1	.31	.02	-.25	.00
D x G	1	127.51	6.76*	1.34	.04
E x G	1	35.11	1.73	.18	.01
D x E x G	1	.61	.03	-.25	.00
Error	72	20.35		20.35	

Note. Negative variance components were assigned an intraclass correlation of zero, however, negative variance components were included in the denominator to compute intraclass correlation coefficients. VC = Variance component; ICC = Intraclass correlation coefficient.

* $p < .05$.

Table 5

Mean Scores and Standard Deviations for each Condition of each Manipulation

Manipulation	Mean	SD
High difficulty level	35.48	8.69
Low difficulty level	24.45	6.89
High effort level	26.83	6.81
Low effort level	14.64	6.83
High goal value level	20.83	4.42
Low goal value level	14.60	4.77

manipulations were effective (see Table 5). In addition, the magnitude of the ICCs indicated that each effect accounted for the largest amount of the variance in the analyses (i.e., task difficulty: .32; level of effort required: .44; and goal value: .31).

The ANOVA for effort level also indicated a significant main effect for task difficulty ($F(1,72) = 3.83, p < .05$). Although this was a weak effect (i.e., ICC = .02), a comparison of means showed that participants in the high difficulty condition had significantly greater scores (M = 22.17) than did participants in the low difficulty condition (M = 19.27). It appears that participants in the high difficulty condition believed that a greater amount of effort was required to receive feedback than did participants in the low difficulty condition, even though the procedures required to obtain feedback were the same.

The ANOVA for goal value also indicated a significant interaction between goal value and task difficulty ($F(1,72) = 6.27, p < .05$). However, this significant interaction effect accounted for a small amount of variation in the ratings (i.e., ICC = .04). Analyses of simple effects indicated a significant task difficulty effect for the high goal value condition ($F(1,79) = 5.14, p < .05$), but no significant effect for the low goal value condition ($F(1,79) = 1.68, p > .05$). The high goal value analyses showed that participants in the low difficulty condition valued the goal more (M = 22.45) than did participants in the high difficulty condition (M = 19.20).

Correlational Analyses

Correlations were computed between the three personality measures (i.e., tolerance of ambiguity, self-esteem, and self-efficacy) and the dependent variables to determine whether the personality measures should be included as covariates in the analysis of variance for the dependent variables. None of these correlations was significant, indicating that analysis of covariance was unnecessary. The correlations are presented in Table 6.

The mean scores for tolerance of ambiguity and self-esteem were 3.30 (SD = .78) and 7.98 (SD = 1.27), respectively. The variables were measured on 9-point scales with larger numbers indicating higher levels of that particular characteristic. Thus, the participants had relatively high levels of self-esteem, and they were relatively intolerant of ambiguity. Self-efficacy was measured on a 100-

Table 6

Correlation Coefficients Between Personality Measures and Dependent Variables

	Personality Measure		
Dependent Variable	Self-Efficacy	Self-Esteem	Tolerance of Ambiguity
Overall feedback	.037	.070	.012
Referent day 1	.108	-.014	-.042
Referent day 2	.073	-.082	.003
Referent day 3	.084	-.115	.042
Appraisal day 1	-.042	.042	-.065
Appraisal day 2	-.032	-.092	.041
Appraisal day 3	-.086	.034	.015
Performance day 1	.175	.152	-.001
Performance day 2	-.020	-.002	-.136
Performance day 3	.080	.111	-.160

percent scale. Its mean score of 44.74 (SD = 23.80), indicated that participants were not confident of their ability to achieve the specified goal.

Dependent Variables

The research hypotheses were examined using a 2 (task difficulty) x 2 (effort level) x 2 (goal value) x 3 (day) mixed model analysis of variance. The

four dependent variables were overall feedback, referent feedback, appraisal feedback, and task performance. Each of the four dependent variables was measured on each of the three "days" as a repeated measure.

Overall feedback. Results of the ANOVA for overall feedback are presented in Table 7. Two significant between-subjects effects were found: a main effect for difficulty level ($F(1,72) = 5.15, p < .05$); and a main effect for effort level ($F(1,72) = 144.82, p < .05$). However, no main effect was found for goal value. This is in contrast to Hypothesis 1, which predicted that participants with high goal value would seek more feedback than those with low goal value.

The significant effect for task difficulty is in contrast to Hypothesis 3, which stated that participants in the high difficulty condition would seek more feedback than participants in the low difficulty condition. The mean scores showed that participants in the low difficulty condition sought significantly more feedback (M = 87.30) than did participants in the high difficulty condition (M = 69.38).

The results for effort support Hypothesis 2 which stated that participants would seek more feedback when they were required to exert a low amount of effort to attain that feedback. The mean scores for effort level show that participants in the low effort condition did seek significantly more feedback (M = 125.85) than participants in the high effort condition (M = 30.83).

The within-subjects analyses revealed two significant effects: a effort level by day interaction ($F(2,144) = 17.61, p < .05$); and a main effect for day ($F(2,144) = 21.62, p < .05$). Regarding the interaction, analyses for simple effects

Table 7

Sources of Variation for Amount of Overall Feedback

Source of Variance	df	MS	F-ratio	VC	ICC
Between-subjects					
Difficulty (D)	1	2142.04	5.15*	7.19	.01
Effort (E)	1	60198.34	144.82*	249.09	.50
Goal value (G)	1	250.10	.60	-.69	.00
D x E	1	315.10	.76	-.42	.00
D x G	1	6760.70	1.63	26.44	.05
E x G	1	8.44	.02	-1.70	.00
D x E x G	1	226.20	.54	-.79	.00
Subjects (S)/DxExG	72	415.67[a]			
Within-subjects					
Days (A)	2	1741.51	21.62*	13.84	.03
A x D	2	54.76	.68	-.22	.00
A x E	2	1418.11	17.61*	11.15	.02
A x G	2	4.75	.06	-.63	.00
A x D x E	2	45.18	.56	-.29	.00
A x D x G	2	3.15	.04	-.65	.00
A x E x G	2	11.04	.14	-.58	.00

Table 7 (concluded)

Source of Variance	df	MS	F-ratio	VC	ICC
A x D x E x G	2	2.25	.03	-.65	.00
A x S/D x E x G	144	80.55[a]			

Note. Negative variance components were assigned an intraclass correlation of zero, however, negative variance components were included in the denominator to compute intraclass correlation coefficients. VC = Variance component; ICC = Intraclass correlation coefficient.

* $p<.05$.

[a] Pooled to estimate a residual variance component equal to 192.26 for computing intraclass correlation coefficients.

indicated a significant effect for day within the low effort condition ($F(2,119) = 8.58$, $p < .05$), but not for the high effort condition ($F(2,119) = .49$, $p > .05$). Tukey's HSD analysis of means for the low effort condition indicated that the participants sought significantly more feedback on days 2 (M = 43.65) and 3 (M = 49.85) than on day 1 (M = 32.35). No significant differences were found between days 2 and 3.

For the significant effect for day, Tukey's HSD analysis showed that the participants sought significantly more feedback on day 3 (M = 30.35) than on day 1 (M = 21.11). There were no significant differences for day 2 (M =26.88).

Referent Feedback. Table 8 displays the sources of variation for referent feedback. Several significant effects were found for the between-subjects sources of variation: a difficulty level by goal value interaction ($F(1,72) = 5.24, p < .05$); a main effect for difficulty level ($F(1,72) = 12.75, p < .05$); and a main effect for effort level ($F(1,72) = 85.04, p < .05$).

An analysis for simple effects was conducted to explore the interaction between difficulty level and goal value. The high goal value analysis indicated a significant effect for difficulty level ($F(1,79) = 7.79, p < .05$). For high goal value, participants in the low difficulty condition sought significantly more referent feedback (M = 65.85) than did participants in the high difficulty condition (M = 29.25). No difficulty differences were found for the low goal value analysis ($F(1,79) = .40, p > .05$) between the high difficulty (M = 40.50) and low difficulty (M = 48.50) conditions.

Regarding the main effect for difficulty, a comparison of the means revealed that participants in the low difficulty condition sought significantly more referent feedback (M = 57.18) than did participants in the high difficulty condition (M = 34.88). This result does not support Hypothesis 3.

A comparison of the means for the significant effect for effort showed that participants in the low effort condition sought significantly more referent feedback

Table 8

Sources of Variation for Amount of Referent Feedback

Source of Variance	df	MS	F-ratio	VC	ICC
Between-subjects					
Difficulty (D)	1	3315.27	12.75*	12.73	.05
Effort (E)	1	22118.40	85.04*	91.08	.37
Goal value (G)	1	62.02	.24	-.83	.00
D x E	1	700.42	2.69	1.83	.01
D x G	1	1363.27	5.24*	4.60	.02
E x G	1	35.27	.14	-.94	.00
D x E x G	1	714.15	2.75	1.89	.01
Subjects (S)/DxExG	72	260.11[a]			
Within-subjects					
Days (A)	2	386.43	5.84*	2.67	.01
A x D	2	15.28	.23	-.42	.00
A x E	2	356.04	5.38*	2.42	.01
A x G	2	2.00	.03	-.53	.00
A x D x E	2	5.25	.08	-.51	.00
A x D x G	2	15.15	.23	-.43	.00
A x E x G	2	16.83	.25	-.41	.00

Table 8 (concluded)

Source of Variance	df	MS	F-ratio	VC	ICC
A x D x E x G	2	11.51	.17	-.46	.00
A x S/D x E x G	144	66.16[a]			

Note. Negative variance components were assigned an intraclass correlation of zero, however, negative variance components were included in the denominator to compute intraclass correlation coefficients. VC = Variance component; ICC = Intraclass correlation coefficient.

* $p < .05$.

[a] Pooled to estimate a residual variance component equal to 243.50 for computing intraclass correlation coefficients.

(M = 74.83) than did participants in the high effort condition (M = 17.23). This result supports Hypothesis 2.

Two significant effects were found for the within-subjects sources of variation: a effort level by day interaction ($F(2,144) = 5.38, p < .05$); and a main effect for day ($F(2,144) = 5.84, p < .05$). The simple effects analysis for the interaction indicated that participants in the low effort condition continued to seek more referent feedback as the days progressed (day 1 M = 20.65; day 2 M = 24.93; day 3 M = 29.25). Bonferroni's t-test indicated significant differences ($p <$

.05) between days 1 and 3. In contrast, the simple effects analysis indicates that in the high effort condition there was no difference in the amount of referent feedback-seeking ($F(2,119) = .17, p > .05$) across the three days (day 1 M = 5.80; day 2 M = 5.45; day 3 M = 5.98).

Regarding the main effect for day, the means indicated that participants sought more referent feedback each day (day 1 M = 13.23; day 2 M = 15.19; day 3 M = 17.61). Bonferroni's t-test indicated significant differences ($p < .05$) between each of the days.

Appraisal feedback. Table 9 provides the sources of variation table for appraisal feedback. The results indicated a significant main effect for effort level ($F(1,72) = 53.85, p < .05$). However, no other significant between-subjects effects were found. The means showed that participants in the low effort condition sought significantly more appraisal feedback (M = 51.03) than did participants in the high effort condition (M = 13.60) This result supports Hypothesis 2.

Two significant effects were found for the within-subjects sources of variation: a effort level by day interaction ($F(2,144) = 9.90, p < .05$), and a main effect for day ($F(2,144) = 14.07, p < .05$). The simple effects analysis for the interaction revealed a significant day effect within the low effort condition ($F(2,119) = 5.78, p < .05$), but not for the high effort condition ($F(2,119) = 1.01, p > .05$). Tukey's HSD test indicated that in the low effort condition, more appraisal feedback-seeking was undertaken on day 2 (M = 18.73) and day 3 (M =

Table 9

Sources of Variation for Amount of Appraisal Feedback

Source of Variance	df	MS	F-ratio	VC	ICC
Between-subjects					
Difficulty (D)	1	127.60	.74	-.19	.00
Effort (E)	1	9337.54	53.85*	38.18	.31
Goal value (G)	1	63.04	.36	-.46	.00
D x E	1	75.94	.44	-.41	.00
D x G	1	119.00	.69	-.23	.00
E x G	1	9.20	.05	-.68	.00
D x E x G	1	136.50	.79	-.15	.00
Subjects (S)/DxExG	72	173.41[a]			
Within-subjects					
Days (A)	2	520.87	14.07*	4.03	.03
A x D	2	38.02	1.03	.01	.00
A x E	2	366.45	9.90*	2.75	.02
A x G	2	12.20	.33	-.21	.00
A x D x E	2	34.35	.93	-.02	.00
A x D x G	2	31.62	.85	-.05	.00
A x E x G	2	4.72	.13	-.27	.00

Table 9 (concluded)

Source of Variance	df	MS	F-ratio	VC	ICC
A x D x E x G	2	10.52	.28	-.22	.00
A x S/D x E x G	144	37.03[a]			

Note. Negative variance components were assigned an intraclass correlation of zero, however, negative variance components were included in the denominator to compute intraclass correlation coefficients. VC = Variance component; ICC = Intraclass correlation coefficient.

* $p < .05$.

[a] Pooled to estimate a residual variance component equal to 124.57 for computing intraclass correlation coefficients.

20.60) than on day 1 (M = 11.70). No significant differences were found between days 2 and 3.

Regarding the significant effect for day, Tukey's HSD procedure revealed a significant difference in the amount of appraisal feedback-seeking between days 1 and 3, with participants seeking more appraisal feedback on day 3 (M = 12.74) than on day 1 (M = 7.89). No significant differences in appraisal feedback-seeking were found for day 2 (M = 11.69).

Performance. Table 10 presents the sources of variation for task performance. The between-subjects analyses revealed a significant main effect for difficulty level ($F(1,72) = 160.02, p < .05$). A comparison of the means revealed that participants in the low difficulty condition performed significantly better (M = 11401.45) than participants in the high difficulty condition (M = 3708.13).

Several significant effects were found for the within-subjects sources of variation: a three-way interaction between difficulty level, effort level, and day ($F(2,144) = 4.29, p < .05$); a two-way interaction between difficulty level and day ($F(2,144) = 7.77, p < .05$); and a main effect for day ($F(2,144) = 25.41, p < .05$).

Examination of the three-way interaction indicated that within the low effort, low difficulty condition, there was a significant difference in performance across the three days ($F(2,59) = 4.16, p < .05$). Tukey's HSD procedure showed that performance on day 3 (M = 7694.85) was significantly greater than performance on day 1 (M = 5496.30) and day 2 (M = 5725.75).

Within the low effort, high difficulty condition there was also a significant difference in performance across the three days ($F(2,59) = 28.39, p < .05$). Tukey's HSD procedure showed that performance was significantly better on day 3 (M = 3768.40) than on days 1 (M = -2103.10) and 2 (M = 2029.50). Also, performance on day 2 was significantly better than performance on day 1.

Within the high effort, high difficulty condition there was a significant difference in performance across the three days ($F(2,59) = 10.58, p < .05$). Tukey's HSD procedure showed that performance was significantly greater on

Table 10

Sources of Variation for Performance

Source of Variance	df	MS	F-ratio	VC	ICC
Between-subjects					
Difficulty (D)	1	129000.00	160.02*	534.13	.15
Effort (E)	1	278.00	.34	-2.21	.00
Goal value (G)	1	146.00	.18	-2.76	.00
D x E	1	1100.00	1.36	1.21	.00
D x G	1	859.00	1.06	.21	.00
E x G	1	128.00	.16	-2.84	.00
D x E x G	1	6.86	.01	-3.34	.00
Subj. (S)/DxExG	72	809.00[a]			
Within-subjects					
Days (A)	2	239000.00	25.41*	1983.83	.57
A x D	2	7300.00	7.77*	53.00	.02
A x E	2	224.00	.24	-5.97	.00
A x G	2	609.00	.65	-2.76	.00
A x D x E	2	4030.00	4.29*	25.75	.01
A x D x G	2	1610.00	1.71	5.58	.00
A x E x G	2	1060.00	1.12	1.00	.00

Table 10 (concluded)

Source of Variance	df	MS	F-ratio	VC	ICC
A x D x E x G	2	896.00	.95	-.37	.00
A x S/D x E x G	144	940.00[a]			

Note. Negative variance components were assigned an intraclass correlation of zero, however, negative variance components were included in the denominator to compute intraclass correlation coefficients. VC = Variance component; ICC = Intraclass correlation coefficient. Each mean square was multiplied by a constant (i.e., 1/10,000) in order to control its magnitude.

* $p < .05$.

[a] Pooled to estimate a residual variance component equal to 3480.79 for computing intraclass correlation coefficients.

days 2 (M = 2021.90) and 3 (M = 3630.55) than on day 1 (M = -1317.95). There was not a significant difference in performance between days 2 and 3.

Within the high effort, low difficulty condition there was not a significant difference in performance across the three days ($F(2,59) = 1.54$, $p > .05$). The mean performance scores for the days were: day 1 (M = 4647.10); day 2 (M = 6269.95); and day 3 (M = 6069.70).

The three-way interaction can be summarized as follows: Participants continued to improve in performance across the three days for each condition of effort and difficulty, with the exception of the high effort, low difficulty condition. In that condition, participants improved in performance from day 1 to day 2, but had a slight decrease in performance on day 3.

The interaction between difficulty level and day was examined using Tukey's HSD procedure. Participants in the low difficulty condition performed significantly better on day 3 (M = 6882.28) than on day 1 (M = 5071.70). Although no significant differences in performance were found for day 2 (M = 5997.85), the trend clearly showed improvement from days 1 to 3. Participants in the high difficulty condition performed significantly better on day 2 (M = 2830.03) and day 3 (M = 2895.15) than on day 1 (M = -1710.53). There was not a significant difference in performance between days 2 and 3. In sum, participants in the low difficulty condition continued to improve in performance over the three days, whereas participants in the high difficulty condition leveled off in their performance from day 2 to day 3.

Regarding the main effect for day, Tukey's HSD test indicated that participants performed significantly better on day 2 (M = 4446.50) and day 3 (M = 4856.15) than on day 1 (M = 1680.59). No significant differences in performance were found between days 2 and 3.

IV. DISCUSSION

Overview

The purpose of the present research was to investigate the effects of goal value, effort required to obtain feedback, and task difficulty on the amount of FSB. It was hypothesized that participants would seek more feedback when: (a) the goal was valued, (b) the effort required to obtain the feedback was low, and (c) the task was difficult. The results did not support the hypothesis regarding goal value. Goal value did not increase the amount of feedback-seeking. Support was found for the effort hypothesis. Participants sought more feedback when little effort was required to obtain that feedback. No support was found for the task difficulty hypothesis. Participants sought more feedback in the low difficulty condition than in the high difficulty condition. These hypotheses and other findings will be examined more thoroughly in the following sections.

Hypothesis 1

It was hypothesized that high goal value would lead to greater feedback-seeking. This hypothesis was not supported even though the experimental manipulation of goal value was effective. However, there was a significant interaction between difficulty level and goal value for referent feedback. In the high goal value condition, participants in the low difficulty condition sought more referent feedback than did participants in the high difficulty condition.

There are plausible explanations why this hypothesis was not supported. With respect to the interaction, participants in the high difficulty, high goal value condition may have perceived the game to be too difficult, reacted negatively, and believed that they could not achieve the goal. With their motivation to achieve the goal lowered, these participants may have stopped trying to seek feedback. This explanation would seem to be supported by the lower performance scores of participants in the high difficulty, high goal value condition (M = 1071.08; SD = 2359.97) as compared to participants in the high difficulty, low goal value condition (M = 1605.35; SD = 4755.90).

Another explanation is that the participants in the high goal value condition were committed to the goal and spent time trying to gain a deeper understanding of how the feedback could be used to improve performance. By doing so, the time spent in seeking feedback was reduced.

Hypothesis 2

Hypothesis 2 stated that participants would seek more feedback only when a small amount of effort was required to obtain it. This hypothesis was supported across all feedback measures (i.e., overall, referent, and appraisal feedback). As Ashford and Cummings (1983) maintain, individuals will seek more feedback when the effort required to obtain it is small.

Hypothesis 3

It was hypothesized that participants would seek more feedback in the high task difficulty condition. This hypothesis was not supported. The analyses showed

that participants sought greater amounts of referent feedback in the low difficulty condition. There are several possible reasons why greater feedback-seeking was not undertaken in the high difficulty condition.

Ashford (1986) states that feedback-seeking will decrease when past instances have not yielded useful information. As such, one explanation may be the perceived lack of usefulness of the feedback. Participants in the high difficulty condition were shown 15 stocks without "change in price" information. They were also not told how the feedback could be used to improve performance. In addition, anecdotal evidence collected during training indicated that the participants had very little knowledge of the stock market. Thus, participants in the high difficulty condition may not have found their previous feedback-seeking efforts to be very helpful, lowering the desire to repeat the feedback-seeking process.

Conversely, for the participants in the low difficulty condition, the previous feedback-seeking efforts could be more readily perceived as useful. In the low difficulty condition, nine stocks were presented along with "change in price" information. The change information was in the form of a positive or negative number, making it easy to recognize which stocks were going up and which were going down. Further, six of the nine stocks were steadily rising and three were steadily falling. There was no change in the upward or downward trend of the stocks over the three "day" period. With this information, these participants could easily and quickly see how the feedback could be used to enhance their ability to

perform the task. As such, the past instances of feedback-seeking yielded useful information which encouraged future feedback-seeking.

A related explanation concerns the amount of time needed to interpret the feedback in the high difficulty condition. As discussed earlier, the "change in price" information made it easy for participants in the low difficulty condition to recognize quickly which stocks to buy and which to sell. As such, the time needed to interpret the feedback was low. This was not the case for the participants in the high difficulty condition.

In sum, the lack of prior knowledge concerning the stock market coupled with little training and no "change in price" information, suggest that the high difficulty participants needed a longer period of time to interpret and understand the feedback. Because of these demands, participants in the high difficulty condition sought less feedback.

Other Findings

For the goal value manipulation, there was a significant interaction with task difficulty. In the high goal value condition, participants in the low difficulty condition valued the goal more than participants in the high difficulty condition. One explanation relates to the ease with which the goal could be achieved. Participants in the low difficulty had a much simpler task of achieving the goal than did participants in the high difficulty condition. For participants in the low difficulty condition, the ease of goal attainment may have increased the value of the goal. For participants in the high difficulty condition, the greater challenge

required to attain the goal may have lowered their level of commitment, and consequently, lowered the value of the goal.

The interaction of day and effort level was significant across each feedback measure. In the low effort condition more feedback was sought each day. One explanation relates to the ease with which feedback could be gathered in the low effort condition and the increasing knowledge of the participants. In the low effort condition, gathering feedback only required pressing the appropriate function key. Conversely, gathering feedback in the high effort condition required the completion of a multi-step procedure. Also, the performance data suggest that participants were gaining a greater understanding of how to play the game as the days progressed. Thus, the simple access of the feedback in the low effort condition coupled with the participant's expanding knowledge of the game may account for the increased feedback-seeking.

Day was also a significant main effect across each feedback measure. The mean scores showed that participants sought more feedback each day. One explanation for this relates to the interaction of day and effort level. Participants in the low effort condition sought more feedback each day, while participants in the high effort condition maintained a constant amount of feedback-seeking across the days. The increase in feedback-seeking for participants in the low effort condition accounts for the significant day effect.

For the performance measure, there were several significant effects: an interaction between difficulty level, effort level, and day; an interaction between

difficulty level and day; a main effect for difficulty; and a main effect for day. The interaction between difficulty level, effort level, and day shows that with the exception of the high effort, low difficulty condition, participants continued to improve in performance across the three days. This suggests that the participants were gaining knowledge of how to play the game effectively as the days progressed. One reason why participants in the high effort, low difficulty condition did not improve on the third day may be that these participants were able to achieve the goal without an increase in performance on the third day. The ability to achieve the goal combined with the high effort associated with obtaining feedback may have decreased the motivation to improve performance on the third day.

For the interaction between difficulty level and day, participants in the low difficulty condition continued to improve in performance over the three days while participants in the high difficulty condition leveled off in their performance on day three. One explanation for this relates to the complexity of the task in the high difficulty condition coupled with the nearness of the game's conclusion. With the game about to end and the high difficulty level of the task, these participants may have simply been trying to maintain their level of performance rather than improve it.

With respect to the significant main effect for difficulty level, participants in the low difficulty condition performed significantly better than participants in the high difficulty condition. This was consistent with the experimental manipulation.

The significant day effect showed that performance on days 2 and 3 was significantly better than performance on day 1. There was not a significant difference in performance between days 2 and 3. One explanation may be that the participants were using day 1 as a learning period to test their own theories as to how to best play the game. On days 2 and 3 the participants knew which strategies to use and which to avoid in order to improve performance. The lack of a significant difference between days 2 and 3 may be explained by the difficulty level by day interaction. Since participants in the high difficulty condition leveled off in their performance on day 3, this could explain the lack of an overall difference between days 2 and 3.

Conclusions

This research contributes to the literature on FSB by experimentally investigating the effects of the effort required to obtain feedback, goal value, and task difficulty on the amount of FSB. Strong support was found for the impact of the effort required to obtain feedback on the amount of FSB. More feedback was sought when the effort required to attain it was low.

No support was found for the hypothesis regarding goal value. There was no difference in the amount of feedback sought between participants in the high and low goal value conditions. It was suggested that the high goal value participants may have reacted negatively to the task in the high difficulty condition, lowering their motivation to achieve the goal and seek feedback. Another explanation suggested that the high goal value participants were

motivated to do well and spent more time trying to understand the feedback, reducing the time available to seek feedback.

The hypothesis regarding greater feedback-seeking when the task was difficult was not confirmed. Participants sought greater amounts of feedback under the low task difficulty condition. It was suggested that the participants in the high difficulty condition may not have found the feedback to be useful which reduced the motivation to seek feedback. Also, it was suggested that the amount of time needed to understand the feedback may have reduced the opportunities for FSB. One explanation why greater feedback-seeking was undertaken in the low difficulty condition was that the feedback was more readily perceived to be helpful in improving performance, which encouraged the use of feedback-seeking.

Implications

The practical implications of this research are threefold. First, the effort required to obtain feedback in the workplace should be kept to a minimum. As was shown, individuals do actively seek feedback from the task when the effort required to obtain it is small.

Second, attention should be given to the usefulness of the feedback. As discussed, one possible explanation why there was not greater feedback-seeking was the perception that the feedback was not helpful in improving performance. As such, simply providing opportunities to gather feedback may not be very beneficial without ensuring that the recipient understands how it can be used.

Third, this research does show that in the design of computer-based tasks such as, help screens, one must consider what information or feedback would be most helpful to the user and then, provide this information in the simplest, most trouble-free way. Many help screens require the completion of a series of seemingly illogical steps in order to receive the desired information or, provide help information that is very technical and complex in nature. Requiring many steps and giving information that is not readily understandable will discourage the use of the help screen (i.e., discourage the use of feedback-seeking) in the future.

Future research

This research has raised several issues for future study. First, in order to explore whether high task difficulty influences the amount of FSB, the usefulness of the feedback should be controlled across difficulty levels. Varying the difficulty of the task and holding constant the perceived usefulness of the feedback would allow for the effect of task difficulty on the amount of FSB to be clearly distinguished.

Second, this research only generalizes to feedback-seeking from computer-based tasks. The frequency of FSB undertaken when gathering from other sources (e.g., supervisors, co-workers, and non computer-based tasks) should be investigated. By doing so, similarities and differences in the frequency of FSB among a variety of sources could be identified.

Third, conducting this research in an organizational setting would allow for differences in FSB among occupations and levels (e.g., management vs. staff) to

be established. Also, using current employees rather than students would increase the generalizability of the results.

Finally, Ashford and Cummings (1985) found a significant difference in the amount of feedback-seeking between individuals with little organizational tenure and those with more organizational tenure. Individuals with little organizational tenure reported seeking more feedback than individuals with more tenure. Thus, varying the number of days of play might allow one to identify the effects of tenure on the amount of FSB.

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APPENDIX A:

Pictorial Representation of Main Computer Screen

Main Screen
Low Effort Condition

9:30 Day 1

STOCK	CURRENT PRICE	HOLDINGS	
			F1: Buy Stock
SEARS	36.03	500	F2: Sell Stock
JCPENN	21.82	500	F3: Cash on Hand
SOVRAN	62.40	500	F4: Stock History
CRESTR	90.75	500	F5: Industry History
USAIR	47.92	500	F6: Summary to Date
DELTA	12.60	500	F7: Daily Gain/Loss
KMART	37.72	0	F8: Gain/Loss to Date
BEST	22.75	0	
LEGGET	47.92	0	ESC: Stock Display

Main Screens
High Effort Condition

9:30 Day 1

STOCK	CURRENT PRICE	HOLDINGS	
			MAIN MENU
SEARS	36.03	500	
JCPENN	21.82	500	Buy Stock
SOVRAN	62.40	500	Sell Stock
CRESTR	90.75	500	Other
USAIR	47.92	500	
DELTA	12.60	500	
KMART	37.72	0	
BEST	22.75	0	
LEGGET	47.92	0	Are you Sure?

9:30 Day 1

STOCK	CURRENT PRICE	HOLDINGS	
			MAIN MENU
SEARS	36.03	500	
JCPENN	21.82	500	Stock Info
SOVRAN	62.40	500	Money Info
CRESTR	90.75	500	
USAIR	47.92	500	
DELTA	12.60	500	
KMART	37.72	0	
BEST	22.75	0	
LEGGET	47.92	0	Are you Sure?

Main Screens Continued
High Effort Condition

9:30 Day 1

STOCK	CURRENT PRICE	HOLDINGS	
			MAIN MENU
SEARS	36.03	500	
JCPENN	21.82	500	Stock History
SOVRAN	62.40	500	Industry History
CRESTR	90.75	500	Summary to Date
USAIR	47.92	500	
DELTA	12.60	500	
KMART	37.72	0	
BEST	22.75	0	
LEGGET	47.92	0	Are you Sure?

APPENDIX B:

Training Materials

General Introduction

You will be here about an hour and a half and what you are going to do is play a computerized stock market game. We're trying to come up with a way to help people understand more about the stock market. So, we're having people come in, play the game, and answer a couple of questionnaires, so that we can get reactions to the game.

General Instructions

You will first have a trial run of the game so that you can get familiar with it. Once you're through with the trial run, you'll play the game over a three day period. Each day runs from 8 a.m. to 1 p.m. and lasts approximately 15 minutes. Each hour lasts approximately 3 minutes. The stock market is open from 9 a.m. to 1 p.m. and you can only buy and sell stocks when the market is open. A bell will sound when the market is open. Stock prices change continuously after the market opens, remember that. So, every time you access a screen or buy and sell stocks, a new price will be re-written on the screen. From 8 a.m. to 9 a.m., you can gather information from the computer concerning the stocks and their performance to aid you in your initial decisions. If you attempt to buy or sell stocks when the market is closed, you will get an error message. You will also get an error message if you attempt to buy more stocks than you have money for.

There will be a break between the days. A clock will be displayed to tell you how many seconds you have left on your break. At the end of the days 1 and

3 you will be asked to complete a short questionnaire. Many people find this game to be quite difficult (quite simple), they find that gathering stock information is time-consuming and inefficient (quick and easy), and find that the goal is unrealistic and unacceptable (realistic and acceptable). So, you'll get a questionnaire dealing with these things, just be honest, I want to know what you really think about this game.

So, to recap, each day runs from 8 to 1, the stock market is open from 9 to 1, you can only buy and sell when the market is open, and stock prices will change continuously once the market is open. Also, you can always access the stock information (i.e., Stock History, Industry History) and money information screens (i.e., Daily Gain/Loss, Gain/Loss to Date) at any point in the game.

The trial run only lasts 10 minutes and only runs until 11:30. It's much quicker than the regular days. Make sure that you look at the Daily Gain/Loss or Cash on Hand screens by 11:00 or you won't know how you've done.

High Difficulty Condition

You'll have 15 stocks to choose from and these stocks represent the retail, airline, and banking industries. There are 5 stocks from each industry, and you'll recognize the names when you see them. To start the game, you will be given 500 shares of each of 6 stocks worth approximately $135,000 and, approximately $265,000 in cash. Your net worth at the beginning of the game is $400,000, that's the cash plus the stocks.

Now let's go over the menus you can use. The stock history and industry history menus provide the high and low prices for the previous year and for the previous day. Also included is the current price and the change in price since the game began. The Summary to Date Menu will give you the high, low, and current values for each stock since the beginning of the game.

You will also be able to get daily gain/loss information which tells you how you've performed against the goal. This information is also available on an overall basis since the game began. It can be found under the Gain/Loss to Date menu. The cash on hand menu will tell you how much cash you have, the cash value of your stocks, and your net worth. Since you know that your net worth is $400,000 at the beginning of the game, you can look at this and get a feel for how well you've done.

All stock prices are fictitious and not based on current market conditions. If you're a stock market follower, don't expect the prices to follow current conditions.

Low Difficulty Condition

You'll have 9 stocks to choose from and these stocks represent the retail, airline, and banking industries. There are 3 stocks from each industry, and you'll recognize the names when you see them. To start the game, you will be given 500 shares of each of 6 stocks worth approximately $135,000 and, approximately $265,000 in cash. Your net worth at the beginning of the game is $400,000, that's the cash plus the stocks.

Now, in order to do well at this game, you need to identify trends in the stocks. That is, you need to figure out whether the stocks are going up or whether they're going down. Basically, you want to buy stocks that are going up and sell stocks that are going down. Now let's go over the menus you can use and let me show you how to gather trend information.

Trend information can be gathered by accessing the stock history menu, the industry history menu, and the summary to date menu.

The stock history and industry history menus provide information about long-term trends in stock prices. These two menus provide information about the high and low prices of each stock for the past 52 weeks and the previous day. Also given is the current price and the net change in price since the opening value (i.e., the stock is up .80 or down .50). If the current stock price is near the high value for the previous 52 week period, then the stock is probably on an upward swing. If the current stock price is near the low value for the previous 52 week period, then the stock is probably on a downward swing. If the stock is between

the high and low values, then it is probably needs further watching to determine if its on an upward or downward swing. The same holds true for industry performance. If the stocks are going up, you should probably buy, if they're going down, you should probably sell.

Short-term trends can be identified by looking at the previous day's high and low and comparing these values against the current price. Longer term trends can be identified by looking at the previous 52 week high and low and comparing the current price against these values.

The Summary to Date Menu will give you the high, low, and current values for each stock since the beginning of the game. To identify short-term trends, you can see how the current price is compared to the high and low values since the game began. Are you near the high for the game or the low? Thus, you want to buy stocks when they are on an upward swing and sell when they are on a downward swing.

Each of these menus, the Stock History, Industry History, Daily Summary, and Summary to Date will help you identify trends in stock performance, thus, helping you increase your net worth.

You will also be able to get daily gain/loss information which tells you how you've performed against the goal. This information is also available on an overall basis since the game began. It can be found under the Gain/Loss to Date menu. The cash on hand menu will tell you how much cash you have, the cash value of your stocks, and your net worth. Since you know that your net worth is

$400,000 at the beginning of the game, you can look at this and get a feel for how well you've done.

All stock prices are fictitious and not based on current market conditions. If you're a stock market follower, don't expect the prices to follow current conditions.

High Effort Condition

To buy stocks, put the box on buy, and hit enter. At that point, the little box will switch over to the list of stock names, arrow down to whatever stock you want to buy and press enter. A message will appear on the bottom of the screen asking "How many shares to buy?". You type in an amount and press enter. If you do not have enough money, an error message will appear saying you have insufficient holdings. At that point, you can type in a smaller number, or sell off other stocks and get more cash.

The same principle holds for selling stocks. Pull the box down to sell, press enter, the box switches over to the list of stocks, arrow down to whatever stock you want to sell, press enter, and a message will appear asking, "How many shares to sell?". You type in an amount and press enter. If you try to sell more shares than you actually own, the computer will give you an error message.

If you decide you don't want to buy or sell, but you've already gone into buy or sell, all you have to do is hit ESCAPE and you can then choose something else.

To get stock information and money information, arrow down to other and press enter. At the bottom of the screen, the computer will ask "Are you sure?". At that point, you have to type in Dpb, exactly as it appears. You will then go into another menu listing Stock Information and Money Information, you choose the information you want to see, press enter, and the computer will again ask "Are you sure?". You type in DpB exactly as it appears. The computer will then

throw you into another menu, you choose which screen you want to see, press enter, and the computer will again ask "Are you sure?". You type Pdb. At that point, the screen you want to see will pop up. Once you're through looking at a screen, hit ESCAPE and the computer will pop you out to the main screen. You then go through this process again to see another screen. I'll leave this sheet with the characters here so you can refer to it.

Low Effort Condition

To buy stocks, press F1 or buy, and then press enter. At that point, a little box will appear on the list of stock names, arrow down to whatever stock you want to buy and press enter. A message will appear on the bottom of the screen asking "How many shares to buy?". You type in an amount and press enter. If you do not have enough money, an error message will appear saying you have insufficient holdings. At that point, you can type in a smaller number, or sell off other stocks and get more cash.

The same principle holds for selling stocks. Press F2 or sell, then press enter, the little box appears on the list of stocks, arrow down to whatever stock you want to sell, press enter, and a message will appear asking, "How many shares to sell?". You type in an amount and press enter. If you try to sell more shares than you actually own, the computer will give you an error message.

If you decide you don't want to buy or sell, but you've already gone into buy or sell, all you have to do is hit ESCAPE and you can then choose something else.

To access any of the other screens, all you have to do is press the appropriate function key. Once you're through looking at a screen, just hit ESCAPE, and you'll come back to the main screen. Then you can hit another function key and see another screen.

High Goal Commitment Condition

The object of the game is to make (the mean for the specific difficulty condition) or more by the end of the 3-day period through the buying and selling of various shares of stock. This goal is based on the performance of previous participants who have completed the game. This goal is difficult, but attainable. You should be able to reach and probably exceed this goal. The previous participants found this goal to be both realistic and acceptable. You'll play the game over a 3-day period, so don't expect to make it all on the first or second days. You have 3 days to do it. The Daily Gain/Loss and Gain/Loss to Date menus will provide you with information on your progress towards the goal.

The reference amount found under the Daily Gain/Loss and Gain/Loss to Date menus will tell you the amount of money you should have made by that time in order to achieve the goal. This is not an absolute value, so don't worry if you're behind the amount at times. You probably will be behind it at some point in the game. Just keep trying.

Low Goal Commitment Condition

The object of the game is to make (ten times the mean for the specific difficulty condition) or more by the end of the 3-day period through the buying and selling of various shares of stock. The Daily Gain/Loss and Gain/Loss to Date menus will provide you with information on your progress towards the goal.

The reference amount found under the Daily Gain/Loss and Gain/Loss to Date menus will tell you the amount of money you should have made by that time in order to achieve the goal. Generally, if you're not within $1000 of the reference amount, you won't make the goal.

APPENDIX C:

Pre-Experimental Questionnaire

Pre-experimental Questionnaire

Using the response scale below, please circle the appropriate number which corresponds to your degree of agreement with the statement. There are no right or wrong answers.

1	2	3	4	5	6	7	8	9
Strongly Agree				Neutral				Strongly Disagree

1. A problem has little attraction for me if I don't think it has a solution.

   1 2 3 4 5 6 7 8 9

2. I don't like to work on a problem unless there is a possibility of coming out with a clear-cut and unambiguous answer.

   1 2 3 4 5 6 7 8 9

3. If I am uncertain about the responsibilities of a job, I get very anxious.

   1 2 3 4 5 6 7 8 9

4. In a decision-making situation in which there is not enough information to process the problem, I feel very uncomfortable.

   1 2 3 4 5 6 7 8 9

5. I function very poorly whenever there is a serious lack of communication in a job situation.

   1 2 3 4 5 6 7 8 9

6. I do not like to get started in group projects unless I feel assured that the project will be successful.

   1 2 3 4 5 6 7 8 9

7. On the whole, I am satisfied with myself.

   1 2 3 4 5 6 7 8 9

1	2	3	4	5	6	7	8	9
Strongly Agree				Neutral				Strongly Disagree

8. At times, I think I am no good at all.

1 2 3 4 5 6 7 8 9

9. I feel that I have a number of good qualities.

1 2 3 4 5 6 7 8 9

10. I am able to do things as well as most other people.

1 2 3 4 5 6 7 8 9

11. I feel that I do not have much to be proud of.

1 2 3 4 5 6 7 8 9

12. I certainly feel useless at times.

1 2 3 4 5 6 7 8 9

13. I feel that I am a person of worth, at least on an equal plane with others.

1 2 3 4 5 6 7 8 9

14. I wish I could have more respect for myself.

1 2 3 4 5 6 7 8 9

15. All in all, I am inclined to feel that I am a failure.

1 2 3 4 5 6 7 8 9

16. I take a positive image toward myself.

1 2 3 4 5 6 7 8 9

Note. Questions 1 - 6 = Tolerance of Ambiguity; Questions 7 - 16 = Self-Esteem. The questions were presented in a random order to the research participants.

APPENDIX D:

Experimental Questionnaire

Experimental Questionnaire

Now that you have had time to become familiar with the game, I'd like you to answer the following questions. Using the response scale below, please circle the appropriate number which corresponds to your degree of agreement with the statement. There are no right or wrong answers.

1	2	3	4	5	6	7	8	9
Strongly Agree				Neutral				Strongly Disagree

1. I think this game can help people understand the stock market.

   1 2 3 4 5 6 7 8 9

2. I think the instructions and trial run helped me understand how to complete the game.

   1 2 3 4 5 6 7 8 9

*3. It is unrealistic for me to expect to make $___ by the end of the 3-day period.

   1 2 3 4 5 6 7 8 9

4. I think the menus are easy to read.

   1 2 3 4 5 6 7 8 9

*5. I am committed to making $___ or more by the end of the 3-day period.

   1 2 3 4 5 6 7 8 9

6. I think the menus are easy to understand.

   1 2 3 4 5 6 7 8 9

7. I think the menus are easy to access.

   1 2 3 4 5 6 7 8 9

*8. I accept the goal to make $___ or more by the end of the 3-day period.

1	2	3	4	5	6	7	8	9
Strongly Agree				Neutral				Strongly Disagree

9. I think this game could be a useful teaching tool.

1 2 3 4 5 6 7 8 9

Using a 100-percent scale, please give the numerical value (0 - 100) which best represents your degree of certainty with the following statements.

10. How certain are you that you can break-even (make $0.00) by the end of the 3-day period? _____

11. How certain are you that you can make $___ by the end of the 3-day period? _____

12. How certain are you that you can make $___ by the end of the 3-day period? _____

13. How certain are you that you can make $___ by the end of the 3-day period? _____

14. How certain are you that you can make $___ by the end of the 3-day period? _____

15. How certain are you that you can make more than $___ by the end of the 3-day period? _____

Note. For the Likert-type scales, the asterisked (*) questions measured goal value, while nonasterisked questions served as distractors. Questions 10 - 15 are self-efficacy questions.

APPENDIX E:

Post-Experimental Questionnaire

Post-Experimental Questionnaire

Using the response scale below, please circle the appropriate number which corresponds to your degree of agreement with the statement. There are no right or wrong answers.

1	2	3	4	5	6	7	8	9
Strongly Agree				Neutral				Strongly Disagree

G/1. I was committed to making $___ or more by the end of the game.

1 2 3 4 5 6 7 8 9

E/2. I think there should be a simpler way to use the Stock Information menus (i.e., Stock History, Industry History, Daily Gain/Loss).

1 2 3 4 5 6 7 8 9

T/3. I thought it was easy to determine how much stock prices changed from hour to hour.

1 2 3 4 5 6 7 8 9

G/4. It was unrealistic for me to expect to make $___.

1 2 3 4 5 6 7 8 9

E/5. I thought it took too much time to get the stock information I wanted.

1 2 3 4 5 6 7 8 9

T/6. I thought it was easy to identify how well the stocks were doing.

1 2 3 4 5 6 7 8 9

T/7. I thought it was easy to identify trends in stock performance.

1 2 3 4 5 6 7 8 9

1	2	3	4	5	6	7	8	9
Strongly Agree				Neutral				Strongly Disagree

E/8. I thought getting information from the Stock Information menus (i.e., Stock History, Industry History, Daily Gain/Loss) was quick and efficient.

1 2 3 4 5 6 7 8 9

G/9. I accepted the goal to make $___.

1 2 3 4 5 6 7 8 9

T/10. I found it easy to predict whether the stocks would go up in price or down in price.

1 2 3 4 5 6 7 8 9

E/11. I think there should be a quicker way to get information from the Stock Information menus (i.e., Stock History, Industry History, Daily Gain/Loss).

1 2 3 4 5 6 7 8 9

T/12. I found it easy to identify which stocks were going up in price and which were going down in price.

1 2 3 4 5 6 7 8 9

T/13. I thought that the stock prices remained stable over the 3-day period.

1 2 3 4 5 6 7 8 9

Note. The letter prior to the item number indicates the experimental manipulation to which the item applies. Abbreviations are: T = Task difficulty; E = Effort; G = Goal value.

APPENDIX F:

Pictorial Representation of Appraisal Feedback Screens

Cash on Hand

9:30 Day 1

Cash on Hand	= $264,550.00
Stock Value	= $136,020.00
Net Worth	= $400,570.00

Daily Gain/Loss

10:30 Day 1

Gain/Loss	= $ -240.00
Reference Amount	= $ 1,500.00

Gain/Loss to Date

12:30 Day 1

Gain/Loss	= $ 1,200.00
Reference Amount	= $ 3,500.00

APPENDIX G:

Pictorial Representation of Referent Feedback Screens

Stock History

9:30 Day 1

Stock	52 WEEKS HI	52 WEEKS LO	PREVIOUS DAY HI	PREVIOUS DAY LO	CURRENT	CHANGE
SEARS	39.10	31.20	38.60	36.60	37.20	.61
JCPENN	70.50	59.80	61.90	60.30	60.40	-.30
SOVRAN	23.00	19.50	23.00	21.70	22.70	.18
CRESTR	49.00	41.30	48.70	46.50	47.40	.22
USAIR	13.00	9.50	13.00	11.70	12.60	.34
DELTA	99.60	89.70	91.90	90.30	90.60	-.55
KMART	39.10	31.20	38.60	36.60	37.20	.28
BEST	91.90	79.80	91.90	90.30	90.40	-.36
LEGGET	43.00	39.50	43.00	41.70	42.70	.08

Note: For participants in the high difficulty condition, 15 stocks were presented but no change information was presented.

Industry History

9:30 Day 1

Stock	52 WEEKS HI	52 WEEKS LO	PREVIOUS DAY HI	PREVIOUS DAY LO	CURRENT	CHANGE
RETAIL	42.40	34.57	41.97	39.90	40.64	.61
BANKS	58.47	49.70	55.60	54.10	54.47	.30
AIRLIN	55.20	49.57	52.63	51.23	52.70	.38

Note: For participants in the high difficulty condition, no change information was presented.

Summary to Date

9:30 Day 1

Stock	Hi Value	Lo Value	Current
SEARS	38.60	36.60	37.20
JCPENN	61.90	60.30	60.40
SOVRAN	23.00	21.70	22.70
CRESTR	48.70	46.50	47.40
USAIR	13.00	11.70	12.60
DELTA	91.90	90.30	90.60
KMART	38.60	36.60	37.20
BEST	91.90	90.30	90.40
LEGGET	43.00	41.70	42.70

Note: For participants in the high difficulty condition, 15 stocks were presented.