

**THE EFFECT OF FEEDBACK STYLE ON FEEDBACK SEEKING BEHAVIORS:
AN EXAMINATION OF PERCEIVED COMPETENCE**

by

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(ABSTRACT)

Research in the area of feedback seeking behaviors (Ashford & Cummings, 1983) has failed to examine the impact of a supervisor's feedback style on a subordinate's subsequent feedback seeking. This is an important area for investigation due to the positive relationship between feedback seeking and performance. Deci and Ryan's cognitive evaluation theory suggests that intrinsic motivation may be an important mediator between feedback style and FSB in that feedback style impacts an individual's desire for mastery of his or her environment which is related to feedback seeking in Ashford and Cumming's model. It is hypothesized that a controlling, in contrast to an informational, feedback style will decrease feedback seeking.

It was found that feedback style, while it did impact intrinsic motivation, did not have an effect on feedback seeking behaviors. The valence of the feedback also impacted intrinsic motivation but only had a marginally significant effect on feedback seeking from the experimenter and no effect on feedback seeking from the task itself. Feedback style and valence did not interact to effect level of intrinsic motivation or FSB. In only one case, the effect of feedback valence on feedback seeking from the experimenter, did it appear that intrinsic motivation acted as a mediator. Possible explanations for the results are discussed, including the nature of the task itself.

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INTRODUCTION

When Ashford and Cummings (1983) introduced their model of feedback seeking behaviors (FSB), a significant contribution was made to the feedback literature in that the individual was no longer viewed as only a passive recipient of feedback as previous viewpoints had maintained (Ilgen, Fisher, & Taylor, 1979). Ashford and Cummings argue that when a supervisor is not available to give feedback to a subordinate, the subordinate will actively seek cues from the environment in order to evaluate his or her performance. The individual seeks feedback from the environment when the information will allow him or her to reach both organizationally determined and individually held goals.

Ashford and Cummings (1983) maintain that individuals will be motivated to seek feedback from their environment when the information that can be attained is valued as a resource as the information assists in the attainment of goals. Therefore, conditions that increase the value of the feedback as a resource should create motivation within the individual for FSB. For example, Ashford and Cummings assert that individuals possess a competence motive as they desire to master their environment in order to attain the goals they seek. Feedback allows individuals to evaluate themselves and judge their level of competency. Thus, when feedback aids in the development of a sense of mastery or competence, it will be valued as a resource and sought by the individual.

When a motivation to attain feedback from the environment is present in an individual, Ashford and

Cummings (1983) maintain that he or she will seek feedback from the environment through one of two strategies. The first strategy, monitoring, is a process in which the individual observes the situation and behaviors of others in order to attain cues that are useful as feedback, and thus, involves interpretation of the cues within the environment. The second strategy, inquiry, occurs when an individual asks others for their evaluation of his or her behaviors. When individuals within organizations see feedback as valuable resource for attaining their goals (i.e., the feedback provides a sense of competency for the individual), there will be a drive to seek information from the environment either through a monitoring or an inquiry process.

Ashford and Cummings (1993) model of feedback seeking behavior posits that individuals actively seek feedback in order to achieve their goals, and these feedback seeking behaviors have been shown to have a positive impact on performance (Ilgen & Moore, 1987; Ashford & Tsui, 1991). One shortfall of the feedback seeking literature, though, is that it has yet to examine the interaction of the feedback style of the supervisor and the feedback valence on the future feedback seeking of the individual. Research in the area of intrinsic motivation suggests that a supervisor's feedback style, in addition to the feedback valence, may impact an individual's level of feedback seeking.

Intrinsic motivation is defined as a motivational state in which an individual is driven or energized by a task itself, as opposed to completing a task for some external purpose (Zhou, 1998). Cognitive evaluation theory (Deci, 1975; Deci & Ryan, 1980) states that a sense of self-

determination and perceived competence are two psychological antecedents of intrinsic motivation in that perceived locus of causality and perceived competence can be responsible for changes in an individual's intrinsic motivation for a task. It is suggested that when an individual attains a sense of self-determination and competence from a task, intrinsic motivation will be enhanced.

Deci and Ryan (1984) distinguished between behaviors that are self-determined and those that are done in response to an external control. Self-determined behaviors are seen as being freely chosen by the individual and absent of any feelings of pressure or force. Controlled behaviors, on the other hand, are seen as those that are experienced by the individual as coerced. When an individual does not perceive him or herself to be in control of an activity, the individual's locus of causality shifts from an internal to an external one. This, in turn, decreases an individual's intrinsic motivation or inherent interest in the task in that he or she perceives that the task is being performed for some external purpose. Examples of events that have been shown to induce a pressure on the individual to perform in specific ways and thus decrease intrinsic motivation include material rewards (Deci, 1971), evaluations (Smith, 1974), and surveillance (Pittman, Davey, Alafat, Wetherill, and Kramer, 1980). It has also been shown that the manner in which events are administered can impact whether an event is perceived as self-determined or controlling. For example, providing standards and using language such as 'should' create a controlling context which has been shown to

decrease intrinsic motivation (Pittman et al., 1980; Ryan, 1982; Zhou, 1998).

In addition to a need for self-determination over one's actions, Deci and Ryan maintain that an individual has a need to feel competent at a task in order to be intrinsically motivated. Cognitive evaluation theory states that if a task provides information that allows an individual to perceive that he or she is capable of doing a task, intrinsic motivation will be enhanced. If a task provides information that allows the individual to attain a sense of mastery over his or her environment, the individual will likely continue to perform a task in order to attain more competence information.

Research has shown that positive feedback tends to enhance feelings of competence and thus intrinsic motivation (Anderson, Manoogian, & Reznick, 1976; Deci, 1971; Harackiewicz, 1979; Pittman et al., 1980; Vallerand and Reid, 1984) while negative feedback has been shown to decrease an individual's perceived competency (Deci & Cascio, 1972; Vallerand & Reid, 1984; Zhou, 1998) and thus undermine intrinsic motivation. Again though, the style or manner in which the feedback is administered to the individual impacts whether intrinsic motivation for a task will be enhanced. Deci and Ryan (1987) maintain that positive feedback will enhance intrinsic motivation by affirming competence only when an individual perceives the activity to be self-determined or free from pressure and control. Thus, when positive feedback is administered in a controlling style, intrinsic motivation can be attenuated as the controlling processes become more salient and the

competence information is reduced. Deci and Ryan (1994) state that when negative feedback is administered in a noncritical, autonomy-supportive manner, it may be less detrimental to intrinsic motivation in that it allows the individual to feel in control over the situation and determine how to perform better which can lead to the attainment of a sense of competence.

Thus, Deci and Ryan state that feedback must not only provide competency information, but the competency information must also be provided in the context of self-determination. They refer to feedback that provides competency information in a noncontrolling style as *informational* feedback. Informational feedback has been shown to enhance intrinsic motivation for a task in contrast to controlling feedback which diminishes an individual's competency motive as the external pressure or control of the task is more salient. This occurs even when positive feedback is delivered to the individual.

The research on intrinsic motivation suggests that when feedback is given in a controlling style, in contrast to an informational style, an individual's competence motive is attenuated. The individual is less likely to continue to perform a task in order to gain competency information and a sense of mastery over the task as those with high intrinsic motivation have been shown to do (Boggiano, Ruble & Pittman, 1982; Pittman et al., 1982). This suggests that individuals who have received controlling feedback will be less likely to seek feedback from their environment as their competence motive, a necessary motivator in the feedback seeking model of Ashford and Cummings (1983), is diminished. Thus, the

research suggests that intrinsic motivation may be an important mediator between feedback and subsequent FSB.

The purpose of this study is to determine whether a supervisor's feedback style impacts an individual's level of feedback seeking on a task. More specifically, the study will examine if providing performance feedback during an inherently interesting task in a controlling, in contrast to an informational style, will lead to lower levels of FSB on the part of the individual due to a decrease in the individual's intrinsic motivation and thus the individual's desire to seek competency information from the environment.

Ashford and Cummings' (1983) Feedback Seeking Model

A predominant view of feedback can be seen in the communications feedback model of Ilgen et al. (1979). They assert that feedback is a process by which a sender conveys a message to a recipient concerning his or her behavior and/or performance. This view asserts that the individual is a passive recipient of information and focuses on feedback as more of an organizational resource as it is seen as a tool for leaders to motivate and instruct the performance of their subordinates towards the goals of the organization (Ashford & Cummings, 1983).

Ashford and Cummings (1983) argue that feedback is not only an important organizational resource, but it also serves as an important resource for the individuals within the organization as they strive not only to perform well within their roles, but also to achieve personal goals beyond high levels of performance. For example, individuals may seek a sense of mastery within their role and the personal satisfaction that is derived from that feeling of

competence. This drive for personal satisfaction goes beyond merely attempting to perform well for the organization. As individuals within the company attempt to meet such goals, feedback on their behavior becomes a valuable informational resource (Ashford & Cummings, 1983). The surrounding environment is a rich source of information that may allow the individual to attain his or her goals.

This view of feedback as not only coming from the supervisor but also the environment, implies a much more active role on the part of the individual in the feedback process. Ashford and Cummings (1983) state that when an experimenter or leader is not available to give feedback, individuals "construct a system of cues to subjectively evaluate their performance" which suggests that "in the work environment, there is always feedback information available in the acts of others and cues offered by the situation" (p. 380). Thus, the individual will actively monitor their environment and directly seek information from others that will aid in the attainment of organizationally determined and individually held goals.

It is important to optimize the use of feedback seeking behaviors due to the positive effects these behaviors have been shown to have on performance. For many years, it has been known that feedback is beneficial to performance and motivation (Ammons, 1956). Recent research has also demonstrated the positive effects on performance of active feedback seeking by the individual (Ashford & Tsui, 1991; Ilgen & Moore, 1987). Thus, it is important to understand what motivates an individual to seek feedback from their

environment instead of solely relying on a supervisor to provide feedback information to him or her.

In their model of the feedback seeking process (see Figure 1), Ashford and Cummings put forth several motivators that they maintain drive people to seek feedback from their surroundings. They maintain that individuals have "particular motivations to know how well they are doing and how certain behaviors are being perceived and/or evaluated by others" (p. 382). The more the feedback is valued as a resource as it allows the individual to move towards his or her goals, the more motivated the individual will be to seek the feedback. Therefore, conditions that increase the value of the feedback as a resource should create motivation within the individual for feedback seeking behaviors. According to Ashford and Cummings, these motivators include: motivation to reduce uncertainty, motivation to correct errors, a competence motive, and an ego defensive motive. Each of these motives is discussed below.

Ashford and Cummings (1983) contend that some degree of uncertainty is necessary for an individual to see feedback as having value. When an individual is faced with more than one behavior that may achieve a desired goal but the different behaviors may lead to varying degrees of efficiency, feedback becomes a valuable resource in that it provides direction to the individual. If no uncertainty exists as to what is the appropriate response to take or what the potential evaluations for that response may be, feedback would not be of value as it provides no new information. When uncertainty does exist, feedback serves an error correction function as it provides the individual

with information concerning the magnitude and direction of errors in the individual's goal directed behaviors (p. 373). Information seeking is a means to reduce the uncertainty over whether one's responses are correct, and thus when an individual experiences uncertainty, he or she will be motivated to seek feedback to reduce the uncertainty and correct any errors in his or her behavior.

Ashford and Cummings (1983) also note that feedback serves a cueing function for the individual. Not only does feedback reduce uncertainties concerning a particular goal, it also provides the individual with signals concerning the relative importance of various goals within the organization. The feedback that the individual obtains from the environment may help the individual decide to which goals the most energy should be devoted. He or she will likely devote the most effort to those goals which have the greatest probability of future payoffs. Feedback which provides the individual with this information will be of value, and therefore the individual will be motivated to seek it.

Another motivator for individuals within organizations is the desire to master their environment in order to achieve the goals that they seek, and so Ashford and Cummings state that individuals possess a competence motive (1983). Feedback information must be available and used in order to attain this sense of mastery or efficacy. Ashford and Cummings state, "feedback is...a central, necessary resource to: understanding the environment; making self-evaluations; and, therefore, to developing and sustaining feelings of competence" (p. 376). Feedback allows the

individual to evaluate him or herself and make judgements concerning his or her competency. Because feedback aids in the development of a sense of mastery of the environment in which people work, it will be valued by individuals as a resource and thus be sought.

Individuals do not always strive for an accurate self-evaluation which will allow them to determine their level of competence, but rather "individuals often experience a conflict between the desire for an accurate feedback portrayal and the desire to enhance their self-esteem" (Ashford & Cummings, 1983, p. 376). This desire to protect one's self-esteem is referred to as an ego defensive motivation, and typically results in an avoidance of feedback or a limited search of information to that which will not threaten one's self-esteem. For example, Zuckerman, Brown, Fox, Lathin, and Minasian (1979) found that poor performers tend to avoid diagnostic information. Therefore, individuals may not always be motivated to seek feedback even though it may serve to decrease uncertainty and allow for corrections of errors.

Ashford and Cummings maintain that when the competence motive, uncertainty, and motivation to correct errors are present within the individual, he or she will actively seek feedback from the environment through one of two strategies: monitoring or inquiring. Monitoring is a process in which the individual attends to information in the environment and "entails observing the situation and the behaviors of other actors for cues useful as feedback" (p. 383). The individual must then interpret the cues that are observed within the environment whether from a task or from watching

another individual. Inquiry occurs when the individual directly asks others in the environment for their perception or evaluation of his or her behavior. Therefore, with monitoring, an individual actively attends to information in the environment while with the inquiry strategy for feedback seeking, the individual directly asks others for their input.

The strategy that the individual chooses in order to attain feedback depends on the perceived costs involved with each (Ashford, 1986). Costs are associated with both feedback seeking strategies. Monitoring and inquiry involve effort costs. With monitoring, the individual must put forth the effort to observe his or her environment for information and then, when the information is obtained, cognitive effort is involved with interpreting the information. With inquiry, the individuals must seek others to act as sources of feedback, explain why they desire the feedback, and so forth. Thus, both strategies involve effort costs.

Other costs are associated with each feedback seeking strategy as well. With the monitoring strategy, there is a risk involved in that the information may be interpreted incorrectly. With the inquiry strategy, the individual publicly seeks feedback and thus risks embarrassment or loss of face. When the employee seeks feedback directly from another coworker or supervisor, it can be interpreted that the individual is weak and cannot work autonomously, or it can be interpreted that he or she is confident enough to be able to ask others for their perspectives or evaluations of their performance. When an individual is seeking feedback,

these costs or possible risks are weighed in order to determine which strategy will be chosen. For example, if the individual perceives loss of face with directly seeking feedback from others, he or she will be more likely to monitor the situation or the behaviors of others for the desired information which will aid in the attainment of his or her goals.

Research on FSB has advanced the feedback literature beyond the idea of the individual as a passive recipient of evaluative information. It is suggested that individuals actively monitor and directly seek feedback that will help them achieve organizationally determined and personally valued goals. It has been shown that feedback seeking behaviors are positively related to performance (Ilgen & Moore, 1987; Ashford & Tsui, 1991). Thus, it is important to determine when individuals are motivated to seek feedback from their environment. It has been shown that a desire for mastery, a desire for error correction, and a drive to reduce uncertainty are all associated with an increase in FSB as the feedback becomes of greater value to the individual as a resource.

One area of deficiency in the FSB literature has been that research has not examined the impact of supervisor's feedback style on subsequent feedback seeking. Research in the area of intrinsic motivation suggests that feedback style may impact levels of feedback seeking behaviors due to its influence on the competence motive.

Deci and Ryan's Theory of Intrinsic Motivation

Deci and Ryan (1985) state that an individual's motivation to perform a task can be either of an intrinsic

or extrinsic nature. An individual who is extrinsically motivated performs a task in order to achieve something as opposed to performing a task for "its own sake". Thus, these are "behaviors that are performed instrumentally to attain some separable consequence" (Deci & Ryan, 1994, p. 5). In contrast, intrinsic motivation is defined as a "motivational state in which an individual is attracted to and energized by the task itself instead of by some external outcomes that might be obtained through doing a task" (Zhou, 1998, p. 262). Thus, the individual sees the process of completing the task as an end in itself as opposed to performing the task in order to attain something else. According to Deci (1975), intrinsically motivated behaviors are those that are performed out of interest and require no external consequences such as prompts, promises, or threats.

Deci (1975) proposed that two needs underlie intrinsically motivated behaviors: the need to feel self-determining and competent. Based on these presumptions, Deci (1975) and Deci and Ryan (1980) put forth their cognitive evaluation theory that asserts self-determination and perceived competence are two psychological antecedents of intrinsic motivation. The perceived locus of causality and perceived competence process can be responsible for changes in intrinsic motivation. According to their theory, the individual's perception of whether the context satisfies these two needs for the individual is critical in determining whether a task will be experienced as intrinsically interesting. Deci and Ryan (1987) refer to this as the functional significance of the task. When the

individual perceives that both of these needs are being fulfilled by a task, intrinsic motivation will be higher.

Self-Determined versus Controlled Behaviors

Deci and Ryan (1994) make a distinction between behaviors that are self-determined and those that are done in response to an external control. They state,

“intentional behaviors may vary in the extent to which they are experienced as freely chosen and emanating from one’s self versus being pressured or controlled by some interpersonal or intrapsychic force. To the extent that they are experienced as freely chosen, they are considered as self-determined (or autonomous)...to the extent that they are experienced as seduced or coerced, they are considered controlled” (p. 4).

According to this distinction, intrinsically motivated behaviors are a model of self-determined behaviors in that the individual voluntarily chooses to engage in them out of an interest that is free from any external demands or rewards. When an individual does not have a sense of control over his or her behaviors or outcomes, this causes the individual’s perceived locus of causality to shift from an internal to an external one. This leaves the person “feeling like pawns to the extrinsic controls” that, in turn, decreases his or her inherent interest in the task (Deci & Ryan, 1994, p. 5).

Research has determined what events are experienced as controlling and thus undermine intrinsic motivation. Events that induce pressure on the individual to perform in specific ways include material rewards (Deci, 1971), good player awards (Lepper, Greene, & Nisbett, 1973), and

evaluations (Smith, 1974). Also, imposing deadlines (Amabile, DeJong, & Lepper, 1976) and goals (Mossholder, 1980) decreases an individual's sense of determination. Pittman et al. (1980) found that surveillance serves to shift an individual's internal locus of causality to an external one. When an individual loses his or her sense of autonomy, intrinsic motivation decreases leading to less willingness to continue performing the activity in free-choice period.

The majority of research that has examined the effect of self-determined versus controlling behavior on intrinsic motivation has used rewards as a proxy for control. Rewards do not always shift an individual's perceived locus of causality from an internal to an external cause, but rather, as Ryan, Mims, and Koestner (1983) have shown, when rewards are differently structured, different effects occur. For example, task-non-contingent rewards- that are given to the individual regardless of whether the task is completed or how well it is performed- are the least likely to undermine intrinsic motivation because the controlling nature of the reward is not as salient.

Task-contingent rewards, on the other hand, are likely to be detrimental to intrinsic motivation in that the controlling aspect is more salient (Enzle & Ross, 1978; Rosenfeld, Folger, and Adelman, 1980). These are rewards that are given for completion of a task without consideration of how well the individual performed. The individual engaging in the behavior does not get a sense of how well he or she is doing in the activity, and therefore,

the person does not feel as though he or she is in personal control of the task.

Performance-contingent rewards, which are based on attaining a specified level of performance, tend to undermine intrinsic motivation unless the controlling aspect is minimized and competence cues are emphasized (Harackiewicz, Manderlink, & Sansone, 1984). A meta-analysis conducted by Eisenberger and Cameron (1996) found that tangible rewards presented independently of performance may cause a decrement in intrinsic motivation because the individual learns that he or she has no control over performance. Thus, if information is given concerning the individual's competence, as with performance-contingent rewards, intrinsic motivation may not be harmed. Again though, research suggests this to only be true if the controlling aspect of the reward is minimized. Therefore, how a reward is administered can determine whether the reward is experienced as controlling. Rewards are not solely perceived as controlling, and thus do not always undermine intrinsic motivation.

The style and language with which events are administered can also impact whether an event is perceived as autonomy supportive (self-determining) or controlling. As was stated previously, Ryan et al. (1983) found that whether performance-contingent rewards were experienced as controlling was dependent on how the reward was administered. If performance-contingent rewards were administered in a controlling style using language such as 'you should' or 'you have to', intrinsic motivation was diminished. Therefore, words like 'should' and providing

standards create a controlling context as they are perceived as external forces pressuring the individual toward doing certain things (Pittman et al., 1980; Ryan, 1982; Zhou, 1998).

If the performance-contingent reward was administered without the use of pressuring language, intrinsic motivation was less likely to be diminished (Pittman et al., 1980; Ryan, 1982; Zhou, 1998). When individuals feel that they are initiating participation in the behavior on their own and that they still retain some choice in their fate, they will feel less under an external control and possess more of a feeling of self-determination. In addition, the performance-contingent reward provides competence information which also has a significant impact on intrinsic motivation.

Perceived competence

As was stated previously, Deci (1975) suggests that not only is a need to feel self-determined an antecedent of intrinsic motivation, but a need to feel competent is as well. Deci and Ryan (1987) state that "intrinsic motivation is based in the need for competence as well as the need for self-determination" (p. 1027). Cognitive evaluation theory therefore posits that if a task provides information that allows the individual to perceive that he or she is competent in addition to a feeling of control over the task, intrinsic motivation will be heightened. Perceived competence thus refers to an individual's belief that he or she is capable of doing a task. If a task provides information which allows the individual to attain a sense of mastery over his or her environment, he or she will likely

continue to be motivated in order to attain more competency information.

Considerable research has examined the relationship between feedback valence and perceived competence. It has been found that positive feedback tends to strengthen perceived competence and enhance intrinsic motivation (Anderson et al., 1976; Deci, 1971; Harackiewicz, 1979; Pittman et al., 1980; Vallerand and Reid, 1984). Positive feedback tends to affirm an individual's sense of competency, and thus people typically continue to be intrinsically motivated to perform a task to fulfill this need for mastery.

Deci and Ryan (1987) note, though, that positive feedback will enhance intrinsic motivation by affirming competence "only when the sense of competence is accompanied by the experience of self-determination...it can also undermine intrinsic motivation by being experienced as a form of interpersonal control" (p. 1027). Positive feedback, therefore, has been found to enhance perceived competence only when the positive feedback results from self-determined activity or is presented with a noncontrolling, autonomy supportive style. For example, Ryan et al. (1983) found that individuals who were told that they 'performed well' had higher intrinsic motivation than those individuals who were told that they 'performed well, as they *should*'. This demonstrates that positive feedback does not always affirm an individual's sense of competence.

The results found by Ryan et al. (1983) have been supported by a considerable amount of research (Fisher, 1978; Pittman, et al., 1980; Ryan, 1982; Zhou, 1998). Deci

and Ryan (1980) and Ryan (1982) maintain that the perception of pressure or the dependence of self-esteem on performance outcomes that occurs when individuals are told, for example, that they 'performed well, as they *should*' interferes with the information process. As Harackiewicz, Sansone, and Manderlink (1985) state, "competence cues can only affect task interest in situations in which performance pressure is minimal. This suggests that if standards initiate controlling processes, the impact of competence cues may be attenuated" (p. 494). Controlling processes become more salient and the competence information is reduced, and thus controlling behavior is typically related to lower perceived competence.

Research that has examined the impact of negative feedback on perceived competence has found that it tends to decrease perceived competence and, in turn, intrinsic motivation. This result has been particularly found if the feedback is critical and evaluative or administered in a controlling style (Deci & Cascio, 1972; Weinberger & Jackson, 1979; Weinberger & Kagan, 1979; Vallerand & Reid, 1984; Zhou, 1998).

Deci and Ryan (1994) suggest that if negative feedback is administered in a noncritical, autonomy-supportive way, it can provide a challenge to the individual and aid them in figuring out how to perform better. They state that if these conditions are met, negative feedback may not undermine intrinsic motivation. Negative effects do tend to have detrimental effects on intrinsic motivation though, because the individual's motive for a sense of competency is not met.

The effect of an individual's perceived competence on intrinsic motivation is related to their perception of the locus of causality. This connects perceived competence back to the need for self-determination. Fisher (1978) states that performance must be seen as internally caused or the result of one's own competence in order to have a substantial impact on intrinsic motivation. Phillips and Lord (1980) found that subjects who received a high amount of competence information reported a stronger feeling of internal causality than did subjects receiving minimal competence information.

Therefore, research suggests that when there is a controlling environment, performance is viewed as due to external causes and not to the individual's own competence. If the individual 'should' perform at a certain level, they will perceive the cause of their performance to be due to an external factor, and their perceived competence will be decreased, even if the feedback is positive. In the case of negative feedback, the individual does not receive the competency information that would allow him or her to feel that he or she has control over the outcome of the task. When the feedback helps the individual to determine how to improve their performance and thus possibly gain control over the outcomes, the decrement to intrinsic motivation may not be as severe.

In their research on intrinsic motivation, Deci and Ryan refer to meaningful feedback that is provided in the context of self-determination as *informational*. Ryan et al. (1983) define meaningful feedback as "effectance" relevant in that it provides the individual with information that

indicates to the person that he or she is competent at the activity or provides the individual with information which lets him or her know how to become more competent (p.737). As Zhou (1998) states, the informational style helps to "maintain and enhance the recipient's sense of internal causality", and the individual is more likely to interpret this feedback as "constructive, informative, understanding, and supportive" (p. 263). Informative feedback will help the individual to maintain a high level of performance without reducing feelings of self-determination.

Informational feedback has thus been shown to provide the individual with a sense of competency as well as a sense of self-determination, the two psychological antecedents of intrinsic motivation. Informational feedback therefore maintains or enhances an individual's intrinsic motivation for a task, while controlling feedback has been shown to be detrimental to intrinsic motivation (Fisher, 1978; Ryan, 1982; Zhou, 1998). Research on the effect of supervisor feedback style on intrinsic motivation has examined the impact of informational feedback in contrast to controlling feedback.

Ryan, et al. (1983) outline characteristics that have been found to be associated with intrinsically interesting tasks. These include challenge (Deci, 1975) and responsiveness or the ability of individuals to control their outcomes (Fisher, 1978). Also, intrinsically interesting tasks must provide effectance feedback (White, 1959), because in order to maintain intrinsic interest, the individual must be able determine how well he or she is doing at the task. The task must also be inherently

interesting in that it is not typically done in order to attain some reward. The tasks that have been shown to be intrinsically interesting provide an individual with both self-determination and a sense of competency, the two psychological antecedents of intrinsic motivation.

Finally, Zhou (1998) reviewed characteristics of individuals who are intrinsically motivated. They tend to prefer complexity and novelty (Pittman, Emery, & Boggiano, 1982) and to be cognitively more flexible (McGraw & Fiala, 1982; McGraw & McCullers, 1979). Also, intrinsically motivated individuals tend to seek higher levels of challenge and mastery experience (Boggiano et al., 1982; Pittman et al., 1982). Thus, the benefits of fostering intrinsic interest on performance can be seen.

Summary and Hypotheses

Cognitive evaluation theory (Deci, 1975; Deci & Ryan, 1980) posits that a sense of self-determination and perceived competence are the two psychological antecedents of intrinsic motivation. Considerable research has supported this proposition of cognitive evaluation theory. When an individual perceives that he or she is freely choosing to participate in a task and has control in the outcomes of the task, in addition to receiving competency information concerning his or her performance, intrinsic motivation will be maintained or enhanced. If these needs are not being satisfied in a task, decrements in intrinsic motivation will occur.

Ashford and Cummings (1983) feedback seeking model suggests that individuals are motivated to seek feedback from their environment due to a desire for mastery of their

environment. Feedback seeking behaviors are driven by a need to assess one's competence. The research of Boggiano et al. (1982) and Pittman et al. (1982) found that individuals who are intrinsically motivated seek higher levels of challenge and mastery experience. These individuals strive to attain further competency information from their environment. When an individual does not receive competency information from a task, intrinsic motivation will be diminished, and the individual will be less driven to receive information concerning how well he or she is performing at a task. It follows that feedback that fosters an individual's intrinsic motivation will lead to higher feedback seeking because people who are intrinsically motivated seek higher levels of mastery experience and strive to fulfill their need for a sense of competence.

In Ashford and Cumming's feedback seeking model, the desire for mastery of the environment produces a motivation within the individual to seek feedback from the environment through one of two strategies: monitoring or inquiring. If this motive is reduced in individuals when competency information is not provided, it should impact all feedback seeking behaviors.

The intrinsic motivation literature suggests that the style of supervisor feedback may impact the level of feedback seeking on the part of the subordinate as feedback style impacts an individual's perceived competence. Research suggests that if feedback is given in a controlling style as opposed to an informational style, perceived competence may be decreased. If perceived competence is attenuated by the controlling feedback style of the

supervisor, an individual is not likely to continue with a task that was previously found to be inherently interesting. Cognitive evaluation theory suggests that if the supervisor's feedback style diminishes the subordinate's competence motive, one of the two psychological antecedents of intrinsic motivation, the individual will likely not be as motivated to continue performing a task to receive this competency information. The literature on intrinsic motivation thus suggests that it is an important mediator between feedback style and feedback seeking behaviors.

Based on previous research, it is hypothesized that by manipulating feedback style (controlling versus informational) and feedback valence (positive versus negative feedback), perceived competence will be impacted. When informational feedback is provided, especially positive feedback, an individual will be provided with a sense of his or her competence and thus will be intrinsically motivated to attain more feedback from the environment. These individuals will seek higher levels of mastery from their environment and thus exhibit feedback seeking behaviors to attain this mastery. When feedback is experienced as controlling for the individual and competency information is not as salient, an individual will not exhibit as high a level of intrinsic motivation and will not strive to seek more competency information from the environment to attain high levels of mastery.

Hypothesis 1: A main effect for feedback valence will be found with positive feedback resulting in more feedback seeking behaviors than negative feedback.

Hypothesis 2: A main effect for feedback style will be found with an informational style resulting in more feedback seeking than a controlling style on the part of the supervisor.

Limited research has examined the combined influence of feedback style and feedback valence on intrinsic motivation. Zhou (1998), in a study on the impact of both positive and negative feedback delivered in an informational versus controlling style on level of creativity, found an interaction between valence and style. Based on Zhou's (1998) findings, it is hypothesized that an interaction between feedback style and valence will be found.

Hypothesis 3: Feedback valence will interact with feedback style to affect the level of feedback seeking by the individual. Individuals who receive positive feedback delivered in an informational style will engage in more feedback seeking behaviors and those who receive negative feedback in a controlling style will engage in less feedback seeking behaviors than those in the other feedback valence and style conditions.

Hypothesis 4: Intrinsic motivation will mediate the relationship between feedback valence and feedback seeking behaviors as well as feedback style and the amount of feedback seeking.

Based on Zhou's (1998) finding of an interaction between feedback style and feedback valence, it is hypothesized that the number of creative responses generated will be greatest in the informational/positive feedback condition and least in the controlling/negative feedback condition.

Hypothesis 5: Feedback valence will interact with feedback style to affect the creative performance by the individual. Individuals who receive positive feedback delivered in an informational style will generate more creative responses and those who receive negative feedback in a controlling style will generate less creative responses than those in the other feedback valence and style conditions.

METHOD

Participants

Participants included 136 undergraduate students, 38 males and 98 females, enrolled in Psychology courses at Virginia Polytechnic Institute and State University. The composition of the sample was 77.2% Caucasian, 5.9% African-American, 5.1% Hispanic, 6.6% Asian. The remaining 5.1% of the participants selected the category designated "Other" for their ethnicity. The participants ranged in age from 18 to over 25 years of age with 97.8% of the sample being between the ages of 18 to 22 years of age.

Design

This experiment was a 2 x 2 (feedback style x feedback valence) Analysis of Variance (ANOVA) design.

Procedure

Participants were run in groups of approximately 8-10 participants and were divided according to the four experimental conditions: informational style/positive feedback, informational style/negative feedback, controlling style/positive feedback, controlling style/negative feedback. The participants were told that the researcher was collecting data on creativity and were given a pre-task measure of perceived competence at creative brainstorming.

They were then asked to participate in three computer-based creative brainstorming tasks. The researcher remained in the room and to oversee the task for the controlling conditions but left the room while those in the informational conditions completed the task. Following the first and second computer-based tasks, the researcher provided individual feedback for the participants according to their condition (informational style/positive feedback, informational style/negative feedback, controlling style/positive feedback, controlling style/negative feedback). Participants were also instructed that they would be able to seek feedback from the computer indicating the number of ideas they had generated during the second and third trials. Following the third trial, the participants were able to request additional feedback from the experimenter.

Following the final session, the participants received a measure of intrinsic motivation, a measure of perceived competence, as well as a measure of ego defensiveness and a manipulation check. The order of the administration of the measure of intrinsic motivation, perceived competence, and ego defensiveness were counterbalanced. After completion of the measures, the participants were debriefed.

Experimental Task

Each participant worked on three separate computer-based brainstorming tasks in which they were asked to generate creative uses for three objects. These included a *book* (trial one), a *knife* (trial two), and a *box* (trial three). For each trial, the participants were given five minutes, and they were to type their ideas into the

computer. The task was based on a feedback seeking study conducted by Morrison and Weldon (1990). A creative brainstorming task was chosen as these exercises have been used in previous studies related to intrinsic motivation (Diehl & Stroebe, 1991; Dennis & Valacich, 1994; Morgan, 1996).

Independent Variables

Feedback Style and Valence. Feedback style was manipulated first by remaining in the room and overseeing the task for the controlling conditions as Pittman, et al. (1980) have demonstrated that surveillance is perceived as controlling for individuals and thus undermines intrinsic motivation. The experimenter left the room while the informational groups were completing the task. Both feedback style and feedback valence were manipulated through the feedback delivered after the completion of the first and second trials. The feedback was adapted from the study conducted Zhou (1998). The feedback also incorporated previous research conducted by Ryan (1982) and Pittman et al. (1980). Once the experimenter retrieved from the computer the total number of ideas generated by the participant, the following feedback was administered:

Informational Style/Positive Feedback:

After trial one- "You did really well.

Congratulations! Keep up the good work."

After trial two- "You are continuing to do really well. Again, keep up the good work."

Informational Style/Negative Feedback:

After trial one- "You didn't do very well, sorry."

After trial two- "Again, you didn't do very well. Keep on trying though."

Controlling Style/Positive Feedback:

After trial one- "You did very well, just as you *should*. But remember, you must keep up your creativity at this level so that we can use your data."

After trial two- "You are continuing to do well as you *should*, and if you keep it up, I will use your data".

Controlling Style/Negative Feedback:

After trial one- "You did very poorly. This *should not* have happened. Remember, you should not repeat the poor performance or we can't use your data."

After trial two- "You are continuing to do poorly which *should not* happen, and if this continues, I will not use your data."

Measures

Intrinsic Motivation. The Mayo (1977) Task Reaction Questionnaire (TRQ) was used as measure of intrinsic motivation (see Appendix A). The questionnaire consists of 23 questions, each scored on a 7-point scale. The questionnaire is based on Deci's (1975) definition of intrinsic motivation. The higher the score obtained on the instrument, the higher the intrinsic motivation of the individual with possible scores ranging from 23 to 161. This measure has been used in several studies (Fisher, 1978; Lopez, 1981; Mayo, 1977; Phillip & Lord, 1980; Vallerand, 1983; Vallerand & Reid, 1984). It has been shown to have high internal consistency (.93; Mayo, 1977) as well as split-half reliability (.96; Fisher, 1978). It has produced results in line with the propositions of cognitive

evaluation theory, and thus has demonstrated construct validity (Fisher, 1978; Mayo, 1977; Vallerand, 1983). In addition, it has been shown to produce the same findings as behavioral measures (Vallerand & Brawley, 1983), and Mayo (1977) found it to be relatively free from socially desirable responses.

Perceived Competence: Pre- and Post-Task. Prior to the brainstorming task, participants were asked two questions regarding their perceived level of competence at creative brainstorming (see Appendix B). Similar questions have been used in previous research which has examined perceived competency (Harackiewicz & Larson, 1986; Sansone, 1989). Responses were measured on a 5-point scale ranging from "strongly disagree" to "strongly agree". In order to assess the impact of the feedback conditions on perceived competence, this dimension was assessed after the task using a modified version of the two questions from the pre-task measure (see Appendix C).

Feedback Seeking Behavior. After the participant typed in a creative use for the focal object of the trial and hit the 'Enter' key, the participant's response disappeared from the screen so that the individual did not have a count of how many creative uses that were generated in front of him or her. After feedback was administered following trial one, the participants were told that they could check to see how many uses they had given on the next two trials by pressing a key on the computer. These instructions in no way encouraged the individual that this is what he or she should have done. The computer recorded the number of times the participant requested to see how many ideas he or she

had generated. This count served as a record of the participant's feedback seeking from the task.

An additional measure of feedback seeking was used. Following the third trial, the computer indicated to the participant that "The experimenter is going to combine your results with those of the other participants now. The quality of your responses will also be assessed. Would you like the experimenter to tell you where you fall in relation to others participating in the study in terms of the number and quality of responses? Type 'yes' or 'no'." This served as a measure of inquiry from another individual and is based upon a study by Vancouver and Morrison (1995).

Ego Defense Measure. The participants were also given a measure of ego-defense motivation to determine whether feedback seeking from the experimenter was influenced by a need to protect their self-esteem. Ashford's (1986) scale for risk in feedback-seeking was used in order to examine whether a need to protect one's self-esteem may have prevented participants from seeking feedback from the experimenter (see Appendix D). The complete scale consists of ten items examining both risk in feedback seeking from the experimenter (the supervisor) as well as others working on the same task (co-workers). Participants were asked to express their level of agreement with the items on a 5-point scale. High scores on the measure reflect a greater perception of risk involved with seeking feedback from the experimenter (supervisor). Only the five items concerning feedback-seeking from the experimenter was used due to the irrelevance of the remaining items in the design of the

study. The reliability of the full scale has been demonstrated (.80, Ashford, 1986).

Performance. As a measure of the participant's performance during the task, the computer recorded the total number of ideas generated during each trial. Thus, the quantity, but not the quality, of the ideas generated served as the measure of individual performance at the creative brainstorming task.

Manipulation Check. In order to determine the success of the manipulation of the independent variables, the participants were given two items to assess the perceived feedback valence and two items to assess the degree to which the participants perceived that they were being controlled (See Appendix E). The manipulation check variables were measured on a 5-point Likert-type scale that ranged from 1 (strongly disagree) to 5 (strongly agree).

RESULTS

Descriptive Statistics

Coefficient alpha reliabilities, or estimates of the internal consistency of the measures used, are reported in Table 1 along the diagonal. All but the pre-test competency and risk in feedback seeking measures have reliabilities exceeding .80. The lower reliabilities of these two measures could be explained by the small number of items used on the scales. The pre-test measure of competency contains only 2 items while the risk in feedback seeking measure contains 5 items, half the number used by Ashford (1986) in the original scale. The extra five items used by Ashford were excluded from the measure as they were not relevant to this study, and thus decreasing the number of items in half could explain the decrease in the reliability from .80 which was found by Ashford. The reliabilities of the scales were .73 for the pre-test competency measure and .72 for risk in feedback seeking, though, are therefore judged to be within an acceptable range.

-Insert Table 1 about here-

The sample means and standard deviations for each measure used as well as the intercorrelations among all measures are also shown in Table 1. The intrinsic motivation scale was significantly correlated with both the pre-task and post-task measures of perceived competency ($p < .01$). The correlation of the post-task measure with intrinsic motivation was .58 in contrast to a lower correlation of .28 between the pre-task measure and intrinsic motivation. The smaller correlation between the pre-task measure of competency and the intrinsic motivation

scale than with the post-task measure of competency and intrinsic motivation was likely due to the manipulations or a response bias that may have occurred when taking the post-task measure and intrinsic motivation measure at the same point in time. The .28 correlation is low enough to state that the competency and intrinsic motivation scales are measuring separate constructs. The pre-task and post-task measure of competency are also positively correlated with one another as would be expected ($\underline{r} = .53, \underline{p} < .01$). An individual's perceived competency at creative brainstorming before the task also is positively correlated with performance during trial one ($\underline{r} = .28, \underline{p} < .01$), trial two ($\underline{r} = .18, \underline{p} < .05$), and trial three ($\underline{r} = .18, \underline{p} < .05$) while post-task perceived competency was not.

Manipulation Check

The manipulation check items demonstrated adequate reliability with $\alpha = .92$ for the questions regarding valence of the feedback given and $\alpha = .80$ for the two items which tapped the controlling style of feedback. The means and standard deviations of the manipulation check items are reported in Table 2. The means are in the expected direction with participants in the controlling conditions, in contrast to those in the informational conditions, showing stronger support for the items which indicate that the experimenter told them that they should be performing to a certain standard during the task and that they must perform at a certain level of creativity or their data would not be used ($\underline{t} (134) = -14.15, \underline{p} < .01$). Participants in the positive feedback conditions showed stronger support than those in the negative feedback conditions for the manipulation check

items that stated that the feedback given to them by the experimenter was positive and that the feedback indicated to them that their performance on the task was positive ($t(118.94) = 28.87, p < .01$).

-Insert Table 2 about here-

Hypotheses

In order to test hypotheses one through three, a 2 (feedback style) x 2 (feedback valence) analysis of variance was conducted on the amount of feedback seeking from the computer during trials two and three separately. Table 3 reports the means and standard deviations for all dependent measures (see Table 3). Table 4 reports the results found for the analysis of variance for feedback seeking from the computer during trials two and three. In order to test the effect of feedback style and valence on whether feedback was sought from the experimenter following trial three, a chi-square test was performed for both independent variables.

Hypothesis 1. The first hypothesis stated that a main effect for feedback valence would be found with positive feedback resulting in more feedback seeking behaviors than negative feedback. An analysis of variance for feedback seeking from the computer during trial two did not support this hypothesis ($F(1,132) = .70, p > .05, M(\text{positive}) = 1.46, M(\text{negative}) = 1.71$). A main effect for feedback valence of feedback seeking from the computer during trial three was also not supported ($F(1, 132) = .88, p > .05, M(\text{positive}) = 1.56, M(\text{negative}) = 1.85$). Contrary to predictions, though, participants who received negative feedback did seek more feedback from the computer, but the differences between the two conditions were not significant.

-Insert Table 4 about here-

Table 5 reports the expected and observed frequency of feedback seeking from the experimenter for the positive and negative feedback conditions. A chi-square analysis revealed marginal significance when testing whether more participants sought feedback when they had received positive feedback than when they had received negative feedback from the experimenter ($\chi^2 = 3.74$, $p = .053$). Thus, the results did not support a main effect for valence when seeking feedback from the experimenter, though the results approached significance with those in the positive feedback conditions seeking more feedback from the experimenter as predicted.

-Insert Table 5 about here-

Hypothesis 2. The second hypothesis stated that a main effect for feedback style would be found with an informational style resulting in more feedback seeking than a controlling style on the part of the supervisor. As shown in Table 4, an analysis of variance for feedback seeking from the computer during trial one did not support this hypothesis ($F(1,132) = 1.29$, $p > .05$, M (Informational) = 1.41, M (Controlling) = 1.75). A main effect for feedback valence of feedback seeking from the computer during trial three was also not supported ($F(1, 132) = 2.85$, $p > .05$, M (Informational) = 1.44, M (Controlling) = 1.97). Contrary to the prediction made, though, participants in the informational feedback conditions did seek less feedback from the computer than those in the controlling conditions even though the difference was not significant.

Table 5 reports the expected and observed frequency of feedback seeking from the experimenter for the informational

and controlling feedback conditions. A chi-square analysis revealed no significant difference between the informational and controlling style conditions in the amount of feedback seeking from the experimenter ($\chi^2 = .046, p > .05$).

Hypothesis 3. Hypothesis 3 stated that feedback valence would interact with feedback style to affect the level of feedback seeking by the individual. It was hypothesized that individuals who received positive feedback delivered in an informational style would engage in more feedback seeking behaviors and those who receive negative feedback in a controlling style would engage in less feedback seeking behaviors than those in the other feedback valence and style conditions. Results revealed that those in the informational style/positive feedback condition actually sought less feedback from the computer while participants in the controlling style/negative feedback condition sought the most feedback from the computer. As shown in Table 4, an analysis of variance did not support an interaction effect between feedback style and valence on feedback seeking from the computer, though, during trial two ($F(1,132) = .20, p > .05, M$ (Informational/Positive) = 1.35, M (Informational/Negative) = 1.47, M (Controlling/Positive) = 1.56, M (Controlling/Negative) = 1.94) or during trial three ($F(1,132) = 1.27, p > .05, M$ (Informational/Positive) = 1.47, M (Informational/Negative) = 1.41, M (Controlling/Positive) = 1.65, M (Controlling/Negative) = 2.29).

Attribute-Treatment Interaction for Feedback Seeking Behaviors

In order to determine whether an individual's pre-task belief concerning their competency at brainstorming tasks

interacted with style and valence to impact the level of feedback seeking on the part of the individual, an analysis was conducted to determine if an attribute-treatment interaction occurred. Pre-task competency was analyzed as a covariate in the analysis of variance. The covariate did not have a significant effect on feedback seeking from the computer during trial two or trial three. Pre-task competency was not shown to significantly interact with feedback style nor did pre-task competency significantly interact with feedback valence to influence the level of feedback seeking by the individual. In addition, an three-way interaction was not significant among style, valence, and pre-task competency. Thus, an attribute-treatment interaction was not found for feedback seeking behavior.

Further examination revealed that the data was positively skewed with high variability, and thus further analyses were conducted in order to determine if correction for these factors would reveal different results. First, to correct for the skewed distribution in the data, a logarithmic transformation was performed and the data was reanalyzed. The analysis revealed that style did have a significant effect on feedback seeking during trial three ($F(1,132) = 4.175, p < .05$), but no other significant results were found. In order to reduce variability, a composite was created using trial two and three for both the original and the transformed data. When the data was reanalyzed, no significant effects were found for the manipulations on the dependent variable, feedback seeking from the computer. Finally, in order to reduce variability within subjects, a within- subjects factor, trial, was

created. Reanalysis with the within-subject factor revealed no significant main effects or interactions. Therefore, the corrections that were made for the skewed distribution and high variability did not result in different conclusions regarding hypotheses one through three.

Hypothesis 4. A regression analysis was used in order to examine the fourth hypothesis which stated that intrinsic motivation would be a mediator between feedback style and feedback seeking behaviors as well as between feedback valence and feedback seeking. The steps proposed by Baron and Kenny (1986) for mediation analyses were followed to test this hypothesis. As the first step of testing the mediating role of intrinsic motivation between feedback style and feedback seeking from the computer, the mediating variable, intrinsic motivation, was regressed on feedback style to determine if style was a significant predictor of intrinsic motivation. Feedback style was shown to predict intrinsic motivation ($F(1,134) = 4.64, p < .05, M$ (informational) = 98.22, M (controlling) = 89.12). This finding supports the analysis of variance results reported in Table 6 which showed a main effect for feedback style on intrinsic motivation.

-Insert Table 6 about here-

A second necessary condition for mediation is that the independent variables must predict the dependent variable, feedback seeking. Regression analysis showed that style was not a significant predictor of feedback seeking from the computer during trial two ($F(1,134) = 1.30, p > .05, M$ (informational) = 1.41, M (controlling) = 1.75) or trial three ($F(1,134) = 2.85, p > .05, M$ (informational) = 1.44,

\underline{M} (controlling) = 1.97) which was also revealed in the analysis of variance (see Table 4). Because the second necessary condition in a mediation analysis was not satisfied, the analysis was ended. Intrinsic motivation did not mediate between feedback style and feedback seeking from the computer.

The steps proposed by Baron and Kenny (1986) for mediation analyses were also followed in order to test the hypothesis that intrinsic motivation mediates between feedback valence and feedback seeking from the computer. For the first step of this process, intrinsic motivation was regressed on feedback valence. Feedback valence was shown to significantly predict intrinsic motivation (\underline{F} (1,134) = 8.127, \underline{p} < .01, \underline{M} (positive) = 99.62, \underline{M} (negative) = 87.72). This finding supports the analysis of variance results reported in Table 6 which shows a main effect for valence on intrinsic motivation.

For the second step of the mediation analysis, feedback seeking from the computer was regressed on feedback valence. The analysis revealed that feedback valence does not significantly predict feedback seeking from the computer during trial two (\underline{F} (1,134) = .71, \underline{p} > .05, \underline{M} (positive) = 1.46, \underline{M} (negative) = 1.71) or trial three (\underline{F} (1,134) = .866, \underline{p} > .05, \underline{M} (positive) = 1.56, \underline{M} (negative) = 1.85). These results are consistent with the analysis of variance results reported in Table 4. Because the second necessary condition for mediation was not satisfied, the analysis was ended. Intrinsic motivation did not mediate between feedback valence and feedback seeking from the computer.

A mediation analysis was also performed in order to determine if intrinsic motivation mediates between feedback style and valence and the second measure of feedback seeking, feedback seeking from the experimenter. Again, the procedure outlined by Baron and Kenny (1986) was followed, but when feedback seeking from the experimenter was the dependent variable, logistic regression was used because the variable is dichotomous. To determine whether the first necessary step for mediation was satisfied, intrinsic motivation, the mediating variable, was regressed on feedback style. Feedback style was shown to significantly predict level of intrinsic motivation ($F(1,134) = 4.64$, $p < .05$, M (informational) = 98.22, M (controlling) = 89.12). Thus, the first criteria for mediation was met.

For the second step of the mediation analysis, feedback seeking from the experimenter was regressed on feedback style in order to determine if feedback style predicts feedback seeking from the inquiry strategy. The analysis revealed that feedback valence does not significantly predict feedback seeking from the experimenter ($\chi^2 = .046$, $p > .05$). Because the second necessary condition for mediation was not satisfied, the analysis was ended. Intrinsic motivation did not mediate between feedback style and feedback seeking from the experimenter.

In order to determine whether intrinsic motivation mediates between feedback valence and feedback seeking from the experimenter, first intrinsic motivation was regressed on feedback valence. The valence of the feedback was shown to significantly predict intrinsic motivation ($F(1,134) =$

8.127, $p < .01$, M (positive) = 99.62, M (negative) = 87.72). Thus, the first step in a mediation analysis was satisfied.

As part of the second step in a mediation analysis, feedback seeking from the experimenter was regressed on feedback valence. Marginal significance was revealed when testing whether feedback valence predicted feedback seeking from the experimenter ($\chi^2 = 3.81$, $p = .057$). Because the second step in the mediation analysis approached significance, the final step in the analysis was conducted in order to determine if intrinsic motivation would mediate between feedback valence and feedback seeking from the experimenter. When feedback seeking from the experimenter was regressed on the mediating variable, intrinsic motivation, and feedback valence, intrinsic motivation was shown to significantly predict feedback seeking from the experimenter ($\chi^2 = 11.65$, $p < .01$) while the level of significance of feedback valence as a predictor decreased well beyond the $p = .057$ level ($\chi^2 = 1.568$, $p = .22$). This finding suggests, though the second step in the analysis was only marginally significant, that intrinsic motivation is a full mediator between feedback valence and feedback seeking from the experimenter while intrinsic motivation does not mediate between feedback style and feedback seeking from the experimenter.

Hypothesis 5: Based on Zhou's (1998) research on the effects of feedback style and valence on creative performance, it was hypothesized that feedback valence would interact with feedback style to affect the creative performance of the individual. It was predicted that individuals who received positive feedback delivered in an

informational style would generate more creative responses and those who received negative feedback in a controlling style would generate less creative responses than those in the other feedback valence and style conditions. In order to test hypothesis five, a 2 (feedback style) x 2 (feedback valence) analysis of variance was conducted on the number of responses generated during trials two and three separately.

The results of the analysis of variance, which are reported in Table 7, revealed only a main effect for valence on performance during trial three ($F(1,134) = 9.65$, $p < .05$, $M(\text{positive}) = 25.93$, $M(\text{negative}) = 33.53$). Thus, an interaction between feedback style and feedback valence on creative performance was not demonstrated, but the results show that feedback valence did lead to differences in performance during trial three. The results are contradictory to those predicted, though, with negative feedback leading to the highest number of creative responses. It should be noted that feedback seeking from the computer during trial three was negatively related to performance during trials one and three ($r = -.21$, $r = -.18$, $p < .05$).

-Insert Table 7 about here-

Attribute-Treatment Interaction for Performance

In order to determine if the participant's pre-task perceived competency at brainstorming tasks interacted with the manipulations of feedback style and feedback valence to impact level of performance, an analysis for an attribute-treatment interaction was conducted. Pre-task competency level was entered into the analysis of variance as the covariate. The covariate was shown to have a significant

effect during trial one ($F(1,129) = 10.04, p < .01$), trial two ($F(1, 129) = 3.97, p < .05$), and during trial three ($F(1,129) = 4.67, p < .05$). Pre-task competency was not shown to interact with feedback style or valence nor was a significant three-way interaction between style, valence, and pre-task competency found. Perceived competency prior to the brainstorming task did not interact with the manipulations to significantly impact performance.

DISCUSSION

In their model of feedback seeking behaviors, Ashford and Cummings (1983) posited that when feedback aids in the development of a sense of mastery or competence at a task, the feedback will be valued as a resource and sought by the individual. Research in the area of intrinsic motivation suggests that when individuals perceive that they are freely choosing to participate in a task and have control in the outcomes of the task, in addition to receiving competency information concerning their performance, they will seek higher levels of challenge and mastery experience due to an increase in their intrinsic motivation for the task (Boggiano et al., 1982; Pittman et al., 1982). These individuals strive to attain further competency information from their environment. It thus seems to follow that individuals who experience higher levels of intrinsic motivation, which has been shown to result when feedback is positive and presented in an informational style, will seek more feedback from their environment as their need for competency, a necessary motivator in Ashford and Cummings' (1983) model, is being met.

Feedback Seeking Behaviors

Based on Ashford and Cummings' model and the intrinsic motivation literature, it was first hypothesized that those individuals who received positive feedback would engage in more feedback seeking behaviors than those individuals who received negative feedback. In contrast to predictions, participants in the negative feedback conditions actually sought more feedback from the computer than those in the positive feedback conditions. A main effect for feedback valence was not found, though, suggesting that positive feedback does not lead to significantly different levels of feedback seeking from the computer from negative feedback. The hypothesis that positive feedback would result in more monitoring behaviors by the individual than negative feedback was not supported.

The results only revealed marginal support for the impact of feedback valence on feedback seeking from the experimenter. Those in the negative feedback condition did seek less feedback from the experimenter than those participants who had received positive feedback regarding their performance, but again, the significance of the results was only marginal and thus the hypothesized relation between feedback valence and feedback seeking from an inquiry strategy was not supported.

Because the results were marginally significant for this feedback seeking strategy but not feedback seeking from the computer, an additional analysis was conducted to determine if the participants' perceived level of risk in seeking feedback from the experimenter influenced the findings. It was shown that participants in the negative

and positive feedback conditions did not differ in their level of perceived risk in seeking feedback from the experimenter, and thus, a greater perceived risk in feedback seeking by those in the negative feedback conditions was not supported as an alternative explanation for different levels of inquiry by the participants in the two conditions.

Hypothesis two stated that individuals who received feedback in an informational style would engage in more feedback seeking than those who received feedback in a controlling style from the experimenter. In contrast to predictions, participants in the informational conditions tended to seek less feedback from the computer than those in the controlling conditions. The difference found was not significant, though, as an analysis of variance revealed no main effect for feedback style on feedback seeking from the computer. Thus, hypothesis two was not supported because informational feedback on the part of the experimenter did not result in higher levels of feedback seeking by the individual from the task. Feedback delivered in an informational style also did not result in different levels of feedback seeking from the experimenter in comparison to controlling feedback. Thus, hypothesis two was also not supported for feedback seeking through an inquiry strategy.

Based on the research of Zhou (1998), it was also hypothesized that feedback style would interact with feedback valence to impact the level of feedback seeking on the part of the individual with those receiving positive feedback delivered in an informational style engaging in more feedback seeking and those receiving negative feedback in a controlling style engaging in less feedback seeking

than those in the other feedback valence and style conditions. Hypothesis three was not supported as the style and valence of the feedback given did not interact to effect the amount of feedback sought from the computer. An interesting trend, though, was that participants in the informational style/positive feedback condition tended to seek the lowest amount of feedback while participants in the controlling style/negative feedback sought the highest level of feedback. However, once again, the differences that did emerge were not significant.

The results of the mediation analysis and an analysis of variance revealed that feedback style and feedback valence did impact intrinsic motivation in a manner consistent with previous research (Pittman et al., 1980; Ryan, 1982; Zhou, 1998). An informational feedback style resulted in a significantly higher level of intrinsic motivation for the task than a controlling feedback style, and positive feedback resulted in higher intrinsic motivation for the task than did negative feedback. It was also shown that valence significantly impacted post-task perceived competency with negative feedback resulting in a lower level of perceived competency following the task. Thus, the precursor to the hypothesized relationship between feedback style and feedback seeking behaviors and feedback valence and feedback seeking behaviors was established.

Intrinsic motivation was not shown to be a mediator between feedback style or feedback valence and feedback seeking from the computer, though, nor was it shown to be a mediator between feedback style and feedback seeking from the experimenter. While the feedback style and valence did

impact an individual's perceived competency as predicted, style and valence did not significantly impact feedback seeking behavior from the computer and feedback style did not impact feedback seeking from the experimenter. Because this necessary criterion for mediation analysis was not satisfied, intrinsic motivation was not found to mediate between feedback style and valence and feedback seeking from the computer or feedback style and feedback seeking from the experimenter.

When examining the role of intrinsic motivation as a mediator between feedback valence and feedback seeking from the experimenter, the results suggested that intrinsic motivation may be a mediator. Though the relationship between feedback valence and feedback seeking from the experimenter was only marginally significant, when the steps in the mediation analysis were continued, intrinsic motivation was shown to significantly predict feedback seeking from the experimenter while valence was shown to become significantly less predictive when the mediator was included in the model. Thus, it appears that intrinsic motivation may mediate between feedback valence and feedback seeking from the inquiry strategy.

A possible explanation for the lack of significant findings for feedback seeking from the computer is related to the nature of the task. It is possible that in a short, timed task individuals could keep a fairly accurate count of the number of ideas generated. They could have had an idea of where they stood in terms of the number of ideas generated by comparing their pace in a particular trial to that of the previous trial(s). Thus, the feedback provided

by the computer may not have provided enough additional information to the participants to result in real differences between groups in the amount of monitoring used as a feedback seeking strategy. Ashford and Cummings (1983) state that uncertainty regarding performance is a necessary component for an individual to engage in feedback seeking behaviors. The task may have not provided enough uncertainty to the individual in terms of the number of ideas generated.

A marginally significant difference in the amount of feedback seeking from the experimenter was found between the positive and negative feedback conditions. Though only approaching significance, the effect of feedback valence was greater on the inquiry strategy for feedback seeking and may reach significance with a larger sample size. This apparent discrepancy between the two feedback seeking strategies could, once again, be explained by the nature of the task. When seeking feedback from the computer, the participants were able to receive feedback concerning the quality of the ideas generated during the trials. Thus, the ability to receive information regarding the quality of the responses generated may have allowed the participants to receive enough new information regarding their performance to serve as a motivator for some individuals to seek additional feedback. It was shown that those who received positive feedback were more likely to seek feedback than those in the negative feedback conditions which is in line with the prediction made.

Though a main effect was not shown for the effects of feedback valence on feedback seeking from the computer, an

interesting trend in the data was found. Subjects in the negative feedback conditions tended to seek higher levels of feedback from the computer than participants who had received positive feedback which was also found for participants who had received controlling feedback in comparison to informational feedback. Besides contradicting the predictions made, most interestingly the results concerning the impact of feedback valence on feedback seeking from the computer contrast those found for feedback seeking from the experimenter which revealed that participants who had received positive feedback sought more feedback from this strategy.

As stated previously, additional analysis revealed that those who received negative feedback did not report higher levels of evaluation apprehension which was tapped by Ashford's (1986) measure of risk in feedback seeking. Thus, the results do not seem to suggest that the negative feedback created evaluation apprehension which prevented the participants from seeking feedback from the experimenter in contrast to those who had received positive feedback. It is possible that the trend of those receiving negative feedback seeking more feedback from the computer but less from the experimenter could be explained by an increased level of performance anxiety during the actual task which led to them seeking feedback to hopefully improve their performance using the "safest" way possible. It cannot be stated for certain that the computer feedback was viewed as less risky than the experimenter feedback because perceived risk of computer feedback was not assessed. Future research in the area should include such a measure.

The finding that participants who had received positive feedback sought more feedback from the inquiry strategy may simply have reflected the desire for those in the positive feedback conditions to have their competency at the task reaffirmed once again following the task. The participant who had been told that he or she was performing well may simply have desired to have his or her ego "stroked" once more by the experimenter. This interpretation is consistent with research in the area of self-enhancement which suggests that individuals are sometimes motivated to maintain or raise their self-esteem (Steele, 1988; Steele & Spencer, 1992). Participants who had been told they were doing well may have been seeking to reaffirm their ability at the task. Those in the negative feedback condition may have wished to avoid feedback that would not allow them to self-enhance.

Performance anxiety could also have been heightened in the controlling style conditions as the experimenter watched the subjects as they completed the task. This may have led to the participants seeking more feedback again in a "safe" manner. This may have resulted in the slightly higher mean levels of feedback seeking from the computer for the controlling style conditions. Again, though, the differences between the conditions in feedback seeking from the computer were not significant.

The results concerning the seemingly contrary findings of the impact of the valence of feedback on feedback seeking from a monitoring strategy and an inquiry strategy could also possibly be explained by research examining feedback intervention theory (Kluger & DeNisi, 1996). This line of

research, though it explicitly concerns the impact of feedback on performance, may provide some insight into the results found for feedback seeking behavior. Kluger and DeNisi (1996) note that when the sign of feedback is negative, individuals tend to choose to increase their effort in order to attain a standard which they are attempting to attain. Therefore, motivation is improved. Praise, on the other hand, tends to direct the individual towards the self which has been shown to impair performance. It is possible that the increased motivation that results when negative feedback is given could result in higher levels of feedback seeking from the task in order for the individual to improve performance. Negative feedback, which has been shown to increase effort, may direct the individual to the task motivation level. This may explain why the participants in the negative feedback condition tended to seek slightly higher levels of feedback from the computer. Also, the participants receiving negative feedback may not have seen additional feedback from the experimenter after the fact as necessary as it would not have any impact on their performance during the task. Those who had received praise in the form of positive feedback may have not been motivated to seek feedback during the task to improve performance and may have simply desired to have their competency reaffirmed once the task was completed. Since it has been shown that praise directs an individual to his or herself, the participants may have desired feedback which taps into this level which would have included feedback from another individual as opposed to the task.

When examining the impact of feedback style on feedback seeking from the experimenter, there was no difference in the amount of feedback seeking from the inquiry strategy between the informational and controlling conditions. This finding may have been due to the informational/controlling manipulation not being as salient to the participants during the trials. It was shown that style did not significantly impact the measure of post-task competency. Therefore, this manipulation may not have had a significant enough of an impact on perceived competence to result in differences in the amount of feedback seeking from the experimenter due to style.

Another possible explanation for the results which again concerns the nature of the task may have been that the task was a short, timed task. Participants in every condition may have felt that if they wanted to perform well that they did not have time to seek much feedback from the computer. In fact, the results demonstrated that feedback seeking was negatively related to performance. The participants had only eight minutes to generate as many ideas as possible. If they sought feedback from the computer, this would take away time that they would have to come up with creative uses. If they wanted to maintain or improve on their level of performance during trial one or two, they may not have been willing to lose too much time in order to assess their progress. If there existed less time constraints, more differences in the amount of feedback seeking from the computer may have emerged between the groups.

Performance

Regarding the level of creative performance among the groups, it was predicted that feedback valence would interact with feedback style to affect the creative performance by the individual. In line with the results found by Zhou (1998), it was hypothesized that individuals who received positive feedback delivered in an informational style would generate a greater number of creative responses and those who receive negative feedback in a controlling style will generate a smaller number of creative responses than those in the other feedback valence and style conditions. Other research also suggests that feedback seeking on the part of the individual enhances performance (Ilgen & Moore, 1987; Ashford & Tsui, 1991). Thus, because it was predicted that those in the informational style/positive feedback condition would engage in higher levels of feedback seeking and those in the controlling style/negative feedback condition would engage in the lowest amount feedback seeking, it was hypothesized that these conditions would have the highest and lowest levels of performance.

However, an interaction between feedback style and valence was not found for performance. The results did show a significant main effect for valence during trial three. The level of performance was in the direction opposite of that predicted, though, with higher levels of responses generated by those in the negative feedback conditions. The results concerning the level of creative performance among the groups contradicts the findings of Zhou's (1998) study which was the only other study to examine the joint

effects of feedback style and valence on performance. Zhou found an interaction between feedback style and valence impacting level of creativity with individuals who had received negative feedback exhibiting lower levels of creativity.

Once again, the findings, which are inconsistent with past research, may be due to the nature of the task. In this study, the measure of creative performance was the quantity of responses generated, whereas in Zhou's study, the measure of creative performance concerned the quality of the responses. It is possible that those in the negative feedback conditions, and thus those who had lower levels of intrinsic motivation towards the task, responded to the experimenter's feedback by typing as many responses as possible, regardless of whether their responses were good. They may have been merely typing in any response in order to surpass their previous level of ideas generated, without concern as to whether the quality of the responses would later be assessed. Those in positive feedback conditions, and who therefore possessed higher levels of intrinsic motivation towards the task, may have been seeking higher levels of challenge, a characteristic of intrinsically motivated individuals, through generating higher quality as opposed to a higher number of responses. Therefore, those in the positive conditions may have been putting more thought and effort into the task in contrast to those who were less motivated intrinsically and who only wanted to attain some standard set by the experimenter. It is uncertain, however, why an effect did not occur for the two style manipulations.

The results which found that participants in the negative feedback conditions generated more responses than those in the positive feedback conditions can also be explained using goal-setting theory. Those in the negative feedback conditions may simply have been setting higher and more specific goals than those in the positive conditions as they attempted to improve upon their performance. It has been shown through research that those who set higher, more specific goals tend to perform better than those who do not (Locke & Latham, 1990).

Finally, the results obtained could be explained by feedback intervention theory (Kluger & DeNisi, 1996). As mentioned previously, when feedback is negative, individuals tend to increase their effort to obtain some standard which should result in increased performance. Research also has suggested that praise tends to impair performance on cognitively demanding tasks as individuals become ego-involved, and thus, intrinsic motivation is decreased. The results of this study found, though, that positive feedback resulted in higher intrinsic motivation than negative feedback which should have enhanced performance for the positive feedback conditions. Those in the positive feedback conditions did increase their performance over each trial, but not to the same level of those who had received negative feedback. The negative feedback may have resulted in even higher levels of effort by the participants to obtain a standard set by the experimenter and thus resulted in the negative feedback condition having higher performance by trial three.

An additional finding of the study was that level of feedback seeking during trial three was negatively related to performance. These results do not support the findings of Ilgen and Moore (1987) and Ashford and Tsui (1991) that feedback seeking behaviors tend to have a positive impact on performance because with this task individuals who sought more feedback were found to have lower levels of performance. As stated previously, the lower performance is likely due to the fact that seeking feedback from the computer decreased the time the participants had to generate creative uses which served as the measure of performance.

Implications and Future Research

One should not assume based on the results of this study that a supervisor can provide any type of feedback, whether it be positive or negative, in any style desired without impacting the amount of feedback seeking on the part of the individual from the task. Neither are the results implying that feedback style and valence does not matter when trying to encourage subordinates to seek more information regarding their performance from other individuals or when trying to increase productivity. As mentioned previously, the task may not generalize as it was a brief, computer-based, timed task that focused on quantity and not quality as the measure of performance.

Further research should examine the impact of feedback style and valence on feedback seeking behaviors in a task that allows the participant more time to seek feedback without the strong pressure to perform at a certain level within a constrained time period. This would allow a more real world test of the impact of feedback style and valence

on feedback seeking behaviors. Also, the assessment of one's performance at the task should be more ambiguous in order that the participants have a greater motivation to seek additional information from the environment in order to assess their performance. This could be achieved through the use of feedback targeted more at the quality of one's performance. Also, in order to attain a situation that may be more generalizable to real world working conditions, the impact of feedback style and valence on feedback seeking behaviors should be assessed in a situation where the subordinates have greater choices regarding how to attain feedback on their own instead of having primarily one means, which was given by the experimenter, of attaining feedback during a task. If feedback seeking behaviors are studied under these conditions, more generalizable and applicable results concerning the relationship between feedback style and valence could be attained.

Finally, another direction that future research on the impact of supervisor feedback style and valence could take is to examine their influence on procedural justice. While the style and valence of feedback may not have a large impact on feedback seeking behaviors, they could have an impact on how fair employees view the procedures of a company. For example, if an employee feels that a supervisor is very controlling in his or her interactions, the employee may feel as though the supervisor's practices are unjust. This reaction could be more intense due to the low level of intrinsic motivation the employee is likely to experience for his or her job. This perception by the individual could have serious, negative implications for an

organization from the future performance of the individual (Clark, 1958) to increased theft within the company (Greenberg, 1990). On the other hand, even if an individual has poor ratings at his or her job, negative reactions towards the supervisor or company may be attenuated if the feedback regarding performance is presented in an informational manner which increases the employee's motivation for the job. Thus, examining the impact of supervisor style and valence on perceived procedural justice could prove to be an important area of investigation.

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APPENDIX A
MEASURE OF INTRINSIC MOTIVATION

Measure of Intrinsic Motivation (Mayo, 1977)

Listed below and on the sheets that follow are a series of statements relating to the tasks that you just completed. Please take your time and respond thoughtfully and honestly to these statements by indicating the extent to which you agree with each. Please answer these questions using the following scale.

Strongly Disagree			Neither Agree nor Disagree			Strongly Agree
1	2	3	4	5	6	7

1. There are several important abilities of mine that were required in order to work effectively on the task.
2. I liked the idea that I had enough freedom and responsibility to do the task the way I wanted.
3. The challenge posed by these task really aroused my interest in it.
4. My feelings while completing the task could best be described by the word excitement.
5. At various times I felt like I was really achieving something while working on the task.
6. There is something about attempting this task that I find very appealing.
7. I enjoyed using what I consider to be a strong natural ability when it comes to this task.
8. The nice feeling associated with working with this task certainly was a determinant of how well I did.
9. I really became absorbed with the task while I was working on it.

10. The task gave me the opportunity to learn something new and interesting.
11. The freedom I had to work at my own pace led me to really work hard on the task.
12. The unpredictable qualities of the task were quite intriguing.
13. The task gave me the opportunity to develop new skills.
14. After working on the task for a while, I felt like a pretty competent individual.
15. My talents were effectively utilized in completing the task.
16. I liked the opportunity I had to decide for myself how I would complete the task.
17. I would describe my time with the task as a pleasant experience.
18. There was plenty of opportunity to exercise my ingenuity and inventiveness on the task.
19. After working for a while, I had the feeling that I was really good at this type of task.
20. I felt considerable pride in knowing that I was doing well on the task.
21. The task could accurately be described as fun.
22. One source of motivation was the opportunity for independent thought and action while working the task.
23. The task really held my attention from the very beginning.

APPENDIX B
PRE-TASK MEASURE OF PERCEIVED COMPETENCE

Pre-Task Measure of Perceived Competence

Please answer the following questions using the scale below.

Strongly	Moderately	Neutral	Moderately	Strongly
<u>Disagree</u>	<u>Disagree</u>		<u>Agree</u>	<u>Agree</u>

1	2	3	4	5
---	---	---	---	---

1. I am competent at brainstorming creative uses for objects.

2. I will do well on the creative brainstorming task compared to other participants.

APPENDIX C
POST-TASK MEASURE OF PERCEIVED COMPETENCE

Post-task Measure of Perceived Competence

Please answer the following questions using the scale below.

Strongly <u>Disagree</u>	Moderately Disagree	Neutral	Moderately Agree	Strongly <u>Agree</u>
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1	2	3	4	5
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1. Doing this task demonstrated that I am competent at brainstorming creative uses for objects.

2. I think that I did well on the task compared to other participants.

APPENDIX D
RISK IN FEEDBACK SEEKING SCALE

Risk in Feedback Seeking Scale (Ashford, 1986)

Please answer the following questions using the scale below.

Strongly Disagree	Moderately Disagree	Neutral	Moderately Agree	Strongly Agree
1	2	3	4	5

1. I thought the experimenter would think worse of me if I asked him/her for feedback.
2. I was not nervous about asking the experimenter how he/she evaluated my behavior. (R)
3. It would not bother me at all to ask the experimenter for feedback.(R)
4. It is not a good idea to ask the experimenter for feedback; he/she might think you are incompetent.
5. It is embarrassing to ask the experimenter for feedback.

APPENDIX E
MANIPULATION CHECK ITEMS

Manipulation Check

1. The feedback given to me by the experimenter was positive.
2. The experimenter's feedback indicated to me that my performance on the task was positive.
3. The experimenter indicated that I should be performing at a certain standard during the task.
4. The experimenter indicated that I had to perform at a certain level of creativity or my data would not be used.

TABLES

Table 1

Descriptive Statistics, Intercorrelation, and Internal Consistencies for Measures

		<u>Means</u>	<u>SD</u>	1	2	3	4	5	6	7	8	9
1.	PreC	7.29	1.45	(.73)								
2.	IM	93.67	24.97	.28**	(.92)							
3.	PostC	6.41	2.05	.53**	.58**	(.80)						
4.	RISK	9.83	3.81	-.10	-.04	-.21*	(.72)					
5.	FSBC2	1.58	1.73	-.06	-.09	-.06	.09	(--)				
6.	FSBC3	1.71	1.84	.02	-.14	-.03	.16	.77**	(--)			
7.	PERF1	18.97	6.76	.28**	.19*	.14	.02	-.14	-.21*	(--)		
8.	PERF2	24.15	10.44	.18*	-.01	-.04	.01	-.06	-.15	.64**	(--)	
9.	PERF3	29.73	14.64	.18*	-.03	-.04	.06	-.12	-.18*	.59**	.71**	(--)

Note: $N = 136$ for all measures. Coefficient alpha for each measure appears in the parentheses. PreC = Pre-task Competency Measure, IM = Intrinsic Motivation, PostC = Post-task Competency Measure, RISK = Risk in Feedback Seeking, FSBC2 = Feedback Seeking from the Computer during Trial 2, FSBC3 = Feedback Seeking from the Computer during Trial 3, PERF1 = Performance during Trial 1, PERF2 = Performance during Trial 2, PERF3 = Performance during Trial 3.

* $p < .05$ ** $p < .01$

Table 2

Means and Standard Deviations for Manipulation Check Items

	Item			
	Control1	Control2	Positive1	Positive2
Manipulation	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
Informational	2.10 (1.32) N=68	1.30 (.68) N=50	3.43 (2.10) N=68	3.06 (1.77) N=68
Controlling	4.06 (1.08) N=68	4.53 (1.06) N=59	2.85 (1.71) N=68	2.76 (1.79) N=68
Positive	2.76 (1.58) N=68	2.65 (1.83) N=49	4.78 (1.18) N=68	4.57 (.74) N=68
Negative	3.40 (1.47) N=68	3.37 (1.81) N=60	1.50 (.82) N=68	1.25 (.47) N=68

Table 3
Condition Means and Standard Deviations for Dependent Measures

Measure	Informational Style		Controlling Style	
	Positive Feedback	Negative Feedback	Positive Feedback	Negative Feedback
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
FSBC2	1.35 (1.25)	1.47 (1.80)	1.56 (1.56)	1.94 (2.20)
FSBC3	1.47 (1.33)	1.41 (1.52)	1.65 (1.91)	2.29 (2.38)
PERF1	18.68 (6.52)	18.26 (6.81)	20.38 (7.50)	18.56 (6.25)
PERF2	21.88 (7.51)	26.12 (11.12)	23.47 (12.95)	25.12 (9.36)
PERF3	25.35 (9.52)	32.53 (14.41)	26.50 (12.70)	34.53 (18.84)
PreC	7.06 (1.46)	7.53 (1.40)	7.50 (1.31)	7.06 (1.61)
IM	103.94 (22.50)	92.50 (21.59)	95.29 (25.47)	82.94 (26.42)
PostC	6.82 (1.75)	6.53 (2.30)	6.88 (1.51)	5.41 (2.26)
RISK	10.09 (3.31)	10.35 (4.05)	8.68 (3.55)	10.21 (4.18)

Note: \underline{N} = 34. See Table 1 for Measure Abbreviations.

Table 4

Analysis of Variance for Feedback Seeking from the Computer

Source of Variation	FSBC2				FSBC3			
	<i>df</i>	<i>MS</i>	<i>F</i>	<i>eta</i> ²	<i>df</i>	<i>MS</i>	<i>F</i>	<i>eta</i> ²
Style	1	3.89	1.29	.01	1	9.53	2.85	.02
Valence	1	2.13	.70	.01	1	2.94	.88	.01
Style*Valence	1	.60	.20	.00	1	4.24	1.27	.01

Note: FSBC2 = Feedback Seeking from the Computer during Trial 2, FSBC3 = Feedback Seeking from the Computer during Trial 3.

* $\underline{p} < .05$

** $\underline{p} < .01$

Table 5

Expected and Observed Frequency of Feedback Seeking from the Experimenter

		Style		Valence	
		Informational	Controlling	Positive	Negative
Sought Feedback	Yes				
	Count	54	55	59	50
	Expected	54.5	54.5	54.5	54.5
No	Count	14	13	9	18
	Expected	13.5	13.5	13.5	13.5

Table 6

Analysis of Variance for Intrinsic Motivation, Post-task Competency, and Risk in Feedback Seeking

Source of Variation	IM				PostC				RISK			
	<i>df</i>	<i>MS</i>	<i>F</i>	<i>eta</i> ²	<i>df</i>	<i>MS</i>	<i>F</i>	<i>eta</i> ²	<i>df</i>	<i>MS</i>	<i>F</i>	<i>eta</i> ²
Style	1	2817.36	4.86**	.04	1	9.53	2.42	.02	1	20.65	1.44	.01
Valence	1	4812.36	8.30**	.06	1	26.47	6.73**	.05	1	27.36	1.91	.01
Style*Valence	1	7.07	.01	.00	1	11.77	2.99	.02	1	13.60	.95	.01

Note: IM = Intrinsic Motivation, PostC = Post-task Competency Measure, RISK = Risk in Feedback Seeking.

* $\underline{p} < .05$ ** $\underline{p} < .01$

Table 7

Analysis of Variance for Performance

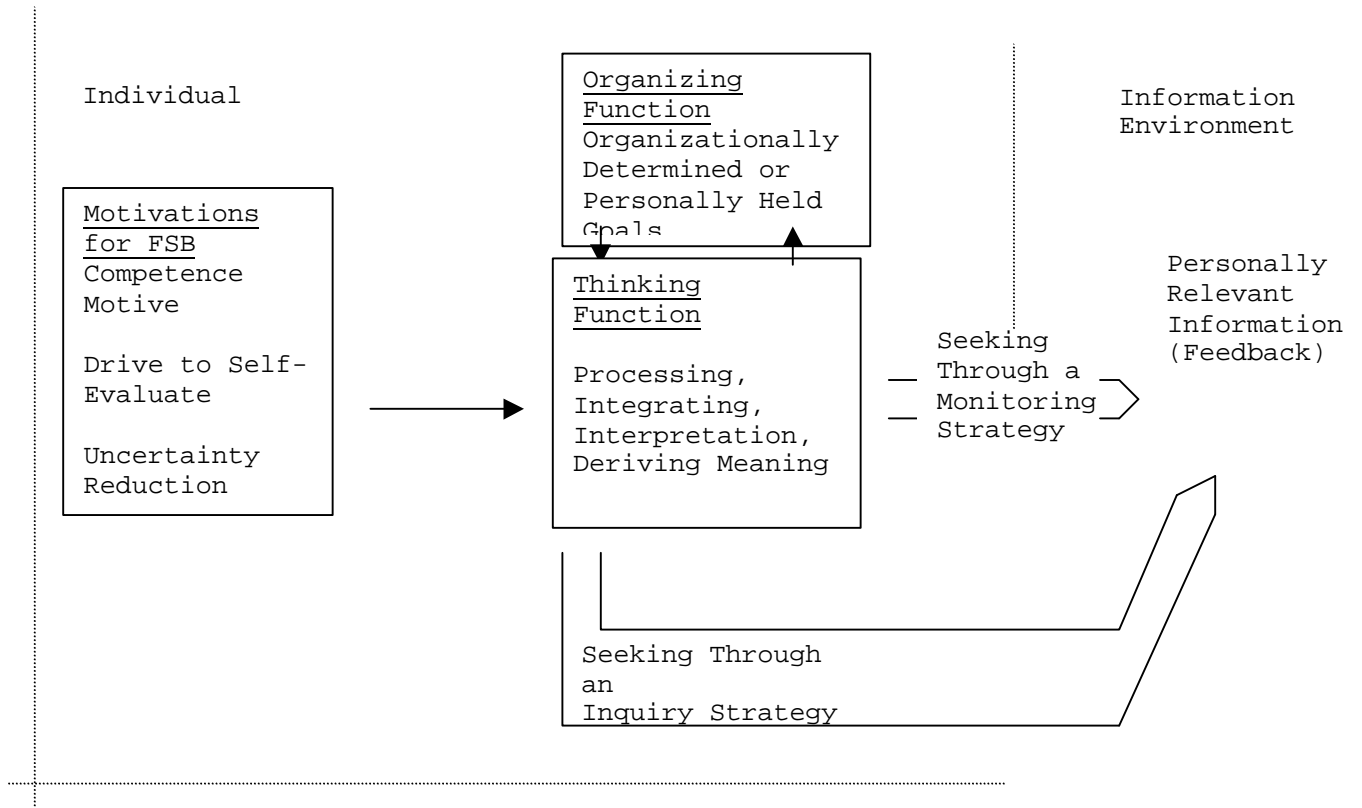
Source of Variation	PERF2				PERF3			
	<i>df</i>	<i>MS</i>	<i>F</i>	<i>eta</i> ²	<i>df</i>	<i>MS</i>	<i>F</i>	<i>eta</i> ²
Style	1	2.94	.03	.00	1	84.18	.41	.00
Valence	1	294.12	2.70	.02	1	1965.36	9.65**	.07
Style*Valence	1	56.94	.52	.00	1	6.18	.03	.00

Note: PERF2 = Performance during Trial 2, PERF3 = Performance during Trial 3.

* $p < .05$ ** $p < .01$

FIGURES

Figure 1. Ashford and Cummings' Model of the Feedback Seeking Process (1983).



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EDUCATION

College of William and Mary

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Bachelor of Arts in Psychology and Religion, May 1997.

Graduated Cum Laude with a 3.5 average on a 4.0 scale with High Honors in Psychology.

Virginia Polytechnic Institute and State University

Blacksburg, Virginia

Master of Science Degree in Psychology, May 1999.

Concentration: Industrial/Organizational Psychology

Thesis Title: The Effect of Feedback Style on Feedback

Seeking Behaviors: An Examination of Perceived Competence

HONORS

Valedictorian- Atlee High School- 1993

Psi Chi Honor Society

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PROFESSIONAL EXPERIENCE

Circuit City Corporate Headquarters- Richmond, Virginia
Human Resources Testing and Assessment Intern - May/August
1998

-Conducted job analysis interviews, biodata questionnaire development, 360 degree feedback facilitator, assessment center training, development of progress conference forms in Excel, development of structured interview guides.

TEACHING EXPERIENCE

Graduate Teaching Assistant - August 1997 to May 1999

-Teaching duties included psychology recitations of approximately 35 students each as well assisting with the introductory psychology lecture.

RESEARCH EXPERIENCE

Virginia Polytechnic Institute and State University

Thesis Research - Roseanne J. Foti, Ph.D. (Chair)

Designed and implemented a study which examined the effect of supervisor feedback style and the valence of feedback on feedback seeking behaviors through their impact on perceived competence.

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Honors Thesis Research- Harvey Langholtz, Ph.D. (Chair)

Designed and implemented a study which examined personal involvement, causal attribution, and framing effects in decisions which involved risk.

POSTER SESSION PRESENTATIONS

Stimpson, E.C. & Langholtz, H. (April, 1997). The effects of personal involvement, attribution, and framing effects in decisions involving risk. Poster session presented at the annual meeting of EPA, Washington, DC.

RELEVANT COURSES

Research Methods Statistics in Research I & II
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