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The effects of leader goal on perceptions of subordinates

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Rice University, 1994

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THE EFFECTS OF LEADER GOAL ON PERCEPTIONS OF SUBORDINATES

by

ELIZABETH ANNE KOTLER

A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE
DOCTOR OF PHILOSOPHY

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ABSTRACT

THE EFFECTS OF LEADER GOAL ON
PERCEPTIONS OF SUBORDINATES

by

ELIZABETH ANNE KOTLER

Research on goal-based processing has shown that the goal or "mindset" with which a perceiver enters an interaction can significantly affect the manner in which information about a target is processed. Leaders and others in organizations might be particularly prone to these types of effects because they need to find ways to minimize the amount of information with which they must deal. Also, years of research on leadership style has demonstrated that different leadership styles differentially affect subordinates. This indicates that a critical link has gone unexamined: The effect of leadership style on the leader him/herself, and particularly on the way in which s/he processes information about subordinates. Leadership style, in its more specific form, can be viewed as a goal similar to many of those studied in the research on goal-based processing. It was proposed that leaders with a high-performance goal and those with a satisfied-worker goal would approach their subordinates differently and would process identical subordinate performance and behavior information in different ways.

Subjects played the role of leaders in this experiment. Subjects were instructed to approach the task and the worker with a particular leader goal,

either high-performance or satisfied-worker. Leaders had a (fictional) worker with whom they worked throughout the task. The leader gave the worker instructions, and the leader received responses and comments from the worker for each trial. Workers either performed well or poorly, and expressed either satisfaction or dissatisfaction with the task. Thus, a 2 x 2 x 2 between-subjects design was used.

Following the task, subjects filled out several questionnaires. Dependent measures included amount and type of instructions given to the worker, incentives chosen for the worker, information seeking, attributions of worker performance, recall of various worker-relevant measures, worker performance ratings, and worker satisfaction ratings.

Results indicated that leader goal had a significant effect on several of the measures, such as attributions, performance ratings, and amount of instruction given. In some cases, leader goal interacted with performance level and/or satisfaction level. The effects of leader goal should be further examined in order to more fully describe the leadership process.

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The Effects of Leader Goal on Perceptions of Subordinates

Organizations are sites of information overload. Few would argue with the statement that most (if not all) of the time, people in organizations have to find ways to minimize the amount of information with which they must deal. This is likely to be especially true for leaders and others in supervisory roles. However, little research has examined the precise manner in which leaders and others in organizations minimize their information load. One answer from the cognitive and social cognition literatures paints humans as "cognitive misers" (e.g., see Fiske & Taylor, 1991) who, for purely cognitive, nonmotivational reasons, process information in particular ways. However, others (e.g., Kunda, 1990, Fiske & Ruscher, 1989) see perceivers as having at least some control over their attentional and interpretational processes. In fact, within the social psychology and social cognition literatures, there has been a recent move toward examining the role of motivation and goals in controlling the course of information processing.

The idea is that these processes will be at least somewhat responsive to the particular demands of a given perceiver in a given context. Understanding the specific "mindset" or goals with which a perceiver is operating therefore might allow one to make predictions about the manner in which that perceiver is likely to process information. As will be discussed in more detail, there is good reason to believe that many mindsets and goals exist in organizations (as elsewhere) which can drive information processing in particular ways. The proposal here is that one such mindset is leadership style; that is, a leader's style can influence the information to which s/he pays attention, the manner in which the information is processed, and decisions and judgments which are then made. In order to specifically operationalize leadership styles, these styles

will be defined in terms of the leader goals they tend to elicit. In other words, two distinct leadership styles will be described, each operationalized by the type of goal such a leader might hold. In the present experiment, I will examine the information processing effects of each leader goal.

There are many examples in the literature of the type of motivational or goal-based processing described above. Such studies have examined the effects of many different kinds of cognitive sets or goals on social information processing. Examples of some of the better known research follow, offering a glimpse at the spectrum of goals that have been examined. The common thread among these studies is the hypothesis that particular goals motivate or encourage people who hold these goals to process information in particular, and predictable, ways. Although the focus of this paper is on leadership and, in particular, on viewing leadership style as a cognitive set or goal, it is important to begin with a brief review of the literature on goal-based processing. It will then be argued that leadership style can rightly be seen, as well, as such a "mindset". Following the discussion of goal-based processing, relevant literature in the areas of leadership and power will be described.

EFFECTS OF GOALS ON INFORMATION PROCESSING

Accuracy Goals

One particularly well-known and widely applicable example is that of accountability, the social pressure to justify one's judgments to others. Over the course of several experiments, Tetlock (e.g., 1985) has shown the effects of accountability to be fairly pervasive in a variety of tasks and measures. Accountable subjects formed more complex and more accurate impressions than did non-accountable subjects (Tetlock & Kim, 1987, Tetlock, 1983b). Accountability was found to reduce primacy effects (Tetlock, 1983a) and to

eliminate the fundamental attribution error (Tetlock, 1985), and in general to lead to more careful and complex information processing. Similar conclusions regarding the impact of accountability have been reached by Rozelle and Baxter (1981) and by McAllister, Mitchell and Beach (1979).

Neuberg and Fiske (1987) have examined the information processing effects of another goal, outcome dependency. Such dependency indicates that one's outcomes, such as rewards or punishments, depend on a target's actions. They compared the impression formation processes of subjects who were dependent on the target for specific reinforcements to those of subjects who were not outcome dependent on the target. They found that outcome dependency led subjects to rely more heavily on individuating processes, focusing more on an attribute-by-attribute examination of the target individual, whereas subjects who were not outcome dependent tended to rely more on category-based processes, using category membership or a schema to form an impression.

Both of the examples given thus far (accountability and outcome dependency) can be classified as in some way motivating the information processor to arrive at more accurate conclusions. Accuracy goals of various kinds do in fact make up a fairly large percentage of the goals which have been studied. For example, in addition to those mentioned, others include Kruglanski's fear of invalidity (1989), Swann's global accuracy (1984), and Hilton and Darley's assessment set (1991). This emphasis on accuracy goals is likely due to the fact that, especially in some arenas such as performance appraisal, accuracy is very important. Thus, if raters, interviewers, etc. can be "encouraged" to process information more accurately simply by being asked to, or by being held accountable in some way, this would be a very useful

conclusion. However, many other more specific types of goals have also been examined, which although more diffuse in nature are arguably more interesting and certainly more applicable to the specific situation being studied.

The effects found in each of the examples cited demonstrate the basic underlying idea that people process information in any given situation in a manner which is consistent with the particular goals they have or the particular mindset with which they are operating. However, all of the examples given so far would seem to lead to the conclusion that different goals can be described in terms of the extent to which they encourage biased processing. This implies that in any comparison of this kind, one goal is "better" than the other. In fact, though, there are many sets of goals which make fascinating and important comparisons, not because one leads to more or less bias or accuracy than the other, but rather simply because of the specific differences in processing which they encourage.

The present study will examine this type of comparison, and specifically will compare the information processing effects of two different leader goals. The major point of such a study is to compare the information processing effects of two interaction goals or sets without attempting to assess which leads to more "accurate" processing (or even to imply that one or the other does). Rather, the importance of the comparison is to demonstrate differences in such measures as attributions, impressions, and memory of another person and to show how divergent these can be.

Communication Goals

Another interesting goal type to be examined has involved different roles in the communication process. In the classic study of this kind, Zajonc (1960) induced different "tuning sets" such that some subjects believed they would

communicate or transmit information whereas others believed they would receive information. Zajonc's belief was that these are two basic ways of dealing with information, that is transmitting and receiving, and that people activate different "cognitive structures" in anticipation of doing one or the other. Results indicated that subjects in the transmission set encoded the information in a way which was more differentiated, complex, unified and organized than did subjects in the receiving set. These measures essentially examined how subjects represented the information. This is another example of how, even though they all in fact had identical information, subjects were "encouraged" to process it differently because they had different processing goals in mind.

Similarly, Higgins, McCann, and Fondacaro (1982) compared impressions of and later recall of information about a stimulus person when subjects were in the role of either speaker or listener, and additionally when they were led to believe that they either would or would not later receive further information and that their communication partner had either the same or different information. All of these variables were found to significantly affect the manner in which impressions were formed and also the type of information which was later remembered.

Perceiver-Induced Constraint

An interesting example of motivated processing which is relevant to the idea of different leader goals or perspectives is a series of articles by Jones and his colleagues (e.g., Gilbert & Jones, 1986, Gilbert, Jones, & Pelham, 1987, and Aronson & Jones, 1992). These authors have investigated a phenomenon referred to as "perceiver-induced constraint". The basic idea behind this stems from one of the major parts of attribution theory, the fundamental attribution error (also referred to as overattribution, the observer bias, or correspondent

inferences). By whatever name, the essential idea is that people have a tendency to attribute corresponding dispositions to targets whose behavior may be explained instead by constraining situational contingencies. For example, a leader might be likely to attribute poor worker performance to worker irresponsibility while the worker perceives the problem to be an unrealistic schedule or lack of adequate instruction. The issue for Jones and his colleagues was that although observers have been found to show this bias, in actuality people rarely are mere observers. Rather, in many if not most situations, we take a more active role in interaction, and in this sense we actually affect the behaviors we are observing in another person.

Gilbert and Jones (1986) described this in terms of the perceiver being the situation to which the target is responding. Their question then was, do people continue to draw correspondent inferences when interpreting the behaviors that they themselves have induced others to perform? In this experiment and one by Gilbert, Jones, and Pelham (1987) the researchers showed that even people who strongly induce targets to act in a certain manner tend to draw correspondent inferences based on that action. Inducers appear to be different from people who passively observe target behavior only when a) they have different personal motivational stakes in the target's action (as a leader might), or b) there is information available about other sources of influence of target behavior (other than the inducer). In light of this other information, observers are less likely to attribute target behavior to target dispositions, whereas inducers apparently are not affected by having this information. This is explained by the fact that inducers seem to concentrate on themselves as an influence source, ignoring other sources.

Within this research program, an experiment by Aronson and Jones (1992) is most relevant to an examination of different leader goals and their effects on information processing. The issue in this experiment was how the perceiver attributes target ability following the perceiver's attempts to influence target performance. Subject "tutors" were asked to choose from among several clues to give a "student" as the student solved problems. In fact, there was no student and all of the student's responses were preprogrammed so that the students' performance level could be manipulated. Tutors were given one of two different goals or mindsets with which to operate. Half were "facilitators" who were supposed to be performance-oriented, concerned with immediate evidence of their clue-giving success (i.e., the student should solve as many problems correctly as possible). The other half were "instructors", concerned with the eventual successful achievements of the student, in the absence of outside tutorial help (i.e., the student should learn strategy and patterns for future problem solving, even if it means getting many wrong now). In addition to tutor style, this between-subjects factorial design manipulated performance level such that it was either ascending or descending in pattern. Importantly, in both performance patterns, the same number of problems was correctly solved. In fact, results showed that facilitators thought the student was more intelligent when performance descended (the typical primacy effect), whereas instructors thought the student was more intelligent when performance improved. Interestingly, this result was not mirrored by a difference in recall of number of problems correctly solved; that is, both tutoring types recalled more problems as having been solved when performance was descending (i.e., both showed a primacy effect in recall). Thus, this recall measure could not explain the difference in attributions. Other measures indicated that facilitators may have

given more weight to early performance and that instructors may have focused more on progress.

The research described above is important to the present project for at least three reasons. One is that it offers another example of how operating with different goals or perspectives in mind can influence the manner in which information is processed about another person. In the case of the "tutoring style" experiment, it is important to note that it may not have been the information remembered per se that led to differences in attributions of ability, but rather something more subtle, such as how the information is weighted. This experiment is also relevant in that the two different goals of the tutors are in many respects similar to different leadership styles as they have traditionally been described. This therefore indicates the potential of the current study in that if different teaching styles, in the form of tutor goals, can lead to different evaluations of a student, then certainly it seems possible, if not likely, that different leadership styles, in the form of leader goals, will lead to different evaluations of a subordinate. Finally, the research on perceiver-induced constraint is important in that it represents one of only a few attempts by researchers to examine the effects of influencing another on the influencing agent him/herself. As will be described later, the vast majority of research in psychology has focused on the target of influence, with a virtual neglect of research on the agent of influence.

Summary of Goal-Based Processing

One important point to be abstracted from the examples described above of studies in goal-based or motivated social information processing and from other studies in this research area is that there are many goals which have in fact been found to significantly alter the manner in which information is

processed. In many cases the differences in goals seem at first glance to be quite subtle, and yet they encourage significantly different manners of processing identical information, which can then affect decisions that are made and any other actions taken on the basis of such information processing. These goals or cognitive sets can influence judgments, decisions, impressions, and any other outcomes of information processing, and the fact that many of these goals have counterparts in the "real world" means that these outcomes can have "real" impact.

Thus, as the preceding pages have demonstrated, the realization and examination of the fact that motivation affects information processing has led to an important area of research within social psychology and social cognition. However, strangely, these ideas have not by and large been extended to the research in industrial and organizational psychology. This extension seems like an important and logical next step. Organizations are full of people who interact with one another with a myriad of (sometimes conflicting) goals regarding what they want or need out of the interaction, and thus there are many different kinds of forces driving their behavior. Because of this, there are an almost endless number of factors in an organization which could potentially act as inducers of a certain "mindset", as the term is operationalized in the types of studies cited above. Goals have, of course, been used and examined in several ways within the industrial/organizational psychology literature, such as in goal-setting theory (e.g., Locke, 1968). However, the major issue regarding goals in the industrial/organizational psychology literature, including Locke's research, has tended to be the effect of goals on performance and achievement. This is a fundamentally different orientation than the one taken here, where the issue regards the effect of goals on <u>perception</u>.

LEADERSHIP STYLE AND POWER

Effects of Leadership Style (on Subordinates)

One type of organizational role which seems to lend itself especially well to this issue is that of a manager or leader. One important feature of the supervisory role is evaluation of subordinates' performance; others include giving subordinates feedback and deciding on use of rewards and punishments, allocation of resources and other various decision making tasks. But given that a manager cannot equally and carefully process all of the available or accessible information relevant to any of these tasks, what will determine what, how, and the extent to which various information is processed? Obviously, the answer to this question is extremely complex. There are a great many factors which can influence a manager's information processing. Several such factors have been examined, such as sex, age and other demographic characteristics, achievement and other orientations, money and other incentives, goal-setting, etc. (e.g., Landy & Farr, 1980, Huber, Neale, & Northcraft, 1987). However, the novel suggestion here is that one important determinant of a manager's information processing is the particular supervisory or leader goal with which the manager approaches his/her job. More broadly, leader goal will stem from leadership style. Neither leader goal nor leadership style, though, has yet been studied in the manner suggested by this proposal.

Although a voluminous amount of research has been done on leadership styles, most of it has focused on the issue of which style or combination of styles is most effective in terms of performance and satisfaction of subordinates. This emphasis, while understandable, is unfortunate because it represents a biased view of the leadership process. Leadership, by its very nature, involves (at least) two people: The leader and the led. Until and unless we have research

to help us understand both sides, we cannot form a coherent picture of leadership. A great deal of research in the area of leadership has focused on identifying and examining differences among different styles of leadership. For example, Bass (1990) discusses models such as Blake and Mouton's (1964), which describe managers in terms of their task- and relationship-orientation. Other models of leadership style which have been frequently researched and discussed include autocratic versus democratic, directive versus participative, consideration and initiating structure, and transactional and transformational (examples of studies of the various styles include Sargent & Miller, 1971, Waldman, Bass, & Einstein, 1987, and Crouch & Yetton, 1988, among many others).

The research on differences among leadership styles suggests that such differences, while not always absolutely consistent, have been found to exist across hundreds of studies. Since different leadership styles and, by extension, leader goals, have been found to differentially affect subordinates, in terms of performance and satisfaction among other things, it seems reasonable to assume that different leadership styles and goals might also affect the leaders or managers themselves in some important way (apart from the style-defining effects on behavior). While this may seem like a statement of the obvious, it has in fact never been examined in the manner proposed here. Rather, the research on leadership has been quite one-sided in its quest to determine the effects of leadership style. That is, it has focused on effects on subordinates. Therefore, one issue that remains unexamined is the effect of leader goal on the leader, and specifically, on the manner in which a leader or manager processes information.

Given the research on mindset and motivation discussed earlier, it seems plausible to expect that leader goal can "encourage" or drive managers to process information in particular ways. For example, certain cues might become more or less salient and behavior of subordinates might be attributed in different ways with varying leader goals. Leaders with different goals might focus on, interpret, or remember information relevant to a worker's success or failure differently. Importantly, the present study is unique in that it includes two different types of success/failure information, both of which are available to leaders. The point of this is to recognize the possibility that leaders with different goals might find different types of information indicative of success/failure, and to provide information which would seem to be particularly relevant to each of the goals.

There are several important reasons for studying the issue of effect of leader goal on leader information processing. One is simply that it poses a basically interesting question about how a leader is cognitively affected by the style which s/he employs and the goals which such styles engender. But to put the issue into the perspective of the kind of research on leadership which has been done over the years, this issue is important in terms of its eventual impact on subordinates. Although, as mentioned, researchers have examined the effects of different leadership styles on subordinates, in reality only half of that story has been told. This is because leadership style might affect subordinates in two distinct ways: One is the traditional way that has been examined, a direct effect of leadership style on subordinates. Presumably, for example, autocratic leaders produce different behaviors in their subordinates than do democratic leaders, by virtue of their different actions toward the subordinates.

The second way is more indirect; that is, the proposal here is that leadership style leads to leader goals, which can affect the leader's perceptions of the subordinate (independently of the latter's behavior or performance). These perceptions can then affect the leader's behavior toward the subordinate, which then directly affects the subordinate. These indirect effects of leadership style on subordinates (via the effects of goals on leaders) ultimately may be at least as important as the more direct effects which have been the nearly exclusive focus of previous research.

The Concepts of "Leadership" , "Leadership Style", and "Leader Goal"

An age-old unanswered question regarding the concept of leadership style involves examination of exactly what leadership is. Bass (1990) discusses "the meaning of leadership", an issue which is enormously complex, widely debated, and not conclusively resolved. Relevant to leadership style, several theorists have defined leadership in terms of personality. Leadership then is seen as a trait or combination of traits, and thus leadership style would be a manifestation of and would be determined by these traits. Another school of theorists prefers to define leadership in terms of acts or behaviors. These acts can include structuring or coordinating tasks and workers, and/or showing concern and consideration for workers' feelings. Leadership style and, further, leader goal, could then be inferred from the types of behaviors a particular leader exhibits. However, for the purposes of this research, it is not important to determine which of these two (or the many other) definitions is "correct". Rather, it adds an interesting dimension to the present research issue. That is, it is suggested here that leadership style may act as or elicit a "mindset" or goal and thereby affect information processing and its outcomes. But whether it is some kind of intrinsic characteristic of a particular style or the actual behaviors that are

associated with a particular style which will affect information processing is not known. Certainly it is possible (and likely) that each of these facets of leadership style has independent effects and that there are interactive effects as well.

Given that there are many different leadership styles which have been described in the literature, any comparison of leader goals based on leadership styles necessitates a decision of which styles to compare. It is important to realize, however, that there is likely to be some overlap between different leadership styles. That is, there is no reason to believe or expect that two quite different leadership styles are mutually exclusive. As noted earlier, Bass (1990) discusses the major leadership styles which have been researched over the years. He describes the broad categories of autocratic and authoritarian versus democratic and egalitarian leaders, but concludes that perhaps the best way to understand these styles is to examine the more distinctive and specific components of each style. Thus, if one's primary interest is in how and by whom decisions are made, then the focus of study might be directive versus participative leadership. If one prefers to make comparisons of a behaviorally factor-derived dichotomy which deals quite broadly with how decisions are made and with the structuring of tasks, goals, and role relationships, then the focus of study would likely be consideration and initiation of structure. There are other comparisons which can be made as well, such as laissez-faire versus a motivation to manage, which focuses on the extent to which leadership is either avoided or attempted. A more recently described model speaks of leaders as transactional and/or transformational; however, although this comparison is very interesting and will undoubtedly be the subject of much future research, it is still presently too new to lend itself to the issue at hand.

Another comparison of leadership styles revolves around the leader's focus of attention. Some leaders concentrate more on the task to be accomplished, and others concentrate more on relationships with others. This comparison of task- and relations-orientation is one which fits in well with the current research issues, since it is based on the premise that different leadership styles begin with a differential focus of attentional resources and end with differential behavior. Because the emphasis in this research project is on information processing implications of different leadership styles, it makes sense to compare styles which are very specific and which involve possible attentional differences. Finally, because the comparison of a task- versus a relations-oriented leader is one which is intuitively interesting and understandable, this is the comparison which will be most useful here. However, these leadership styles will be studied and operationalized by goals these leaders would likely hold. Task-oriented leadership style will be referred to as holding a goal to have a worker perform well, or having a high-performance goal. Relations-oriented style will be referred to as holding a goal to have a worker who is satisfied, or having a satisfied-worker goal. Reference to a goal rather than a style makes the somewhat nebulous leadership styles more specific and discrete and also is more closely tied to previous goal-based processing research described earlier.

There are two distinct issues which need to be clearly separated. One issue concerns the variables which affect leader goal, which would assess leader goal and different types of leader behaviors as the dependent measures. This is an interesting issue, but is not the one featured in this project. However, it is relevant and therefore will be discussed where necessary or helpful. The second issue is the one presently of interest, which looks at leader goal as the

independent variable and examines its effects on the leader's cognitive processes such as memory, attributions, and impressions of a subordinate.

Although this issue has not been studied per se, two areas of literature that have touched on some of its implications are performance feedback and performance appraisal. The relevant points will therefore be briefly described. However, it is important to note that much of this research has focused on the first issue mentioned above; that is, examination of the determinants of leadership style or goal (as opposed to the consequences of leadership style or goal).

Performance Feedback

Larson (1984) presents a model of the performance feedback process, noting that although there is an extensive amount of research on the effects of performance feedback on those who receive it, there is surprisingly little on the factors which influence delivery of such feedback. Larson implies that leadership style, whether it is organizationally-, experimenter- or self-induced, can influence a manager's performance feedback behavior toward subordinates.

Another area of research relevant to performance feedback is that of supervisors' use of incentives to bolster subordinate performance. One study in particular hints at the potential for fascinating conclusions in this research area. Rothbart (1968) examined the manner in which incentives are administered by subjects acting in the role of supervisors. He also looked at some of the factors which appear to influence the decision to use reward or punishment. One of the most interesting findings of this research was that a subject's use of punishment influenced his/her perception of the worker's level of effort. That is, even though subjects were free to use either reward or punishment as incentive, their use of

punishment led them to attribute the worker's failure to a lack of motivation (as opposed to a lack of ability) to perform well. In other words, rather than subjects' use of incentives being based on their inferences about worker motivation, it was found that such inferences were actually based on use of incentives. The relevant conclusion drawn here is that an individual's behavior toward another can actually structure his/her perceptions of the other's intentions. Extending this to the current research, it suggests that simply the act of behaving with a particular leader goal in mind could in and of itself affect attributions, decisions, and other judgments made about a subordinate, independently of the subordinate's actual performance or behavior.

Podsakoff (1982), in a literature review of supervisors' use of rewards and punishments, speaks of authoritarianism as one potential determinant of decisions regarding which to use. However, research on this question has yielded inconsistent results. Authoritarianism is similar to (and in fact is a feature of) several of the "leadership styles" which have been described in the leadership literature. Thus, an important next step would be to examine the information processing strategies which correspond to this and/or other styles, which might explain differential behavior.

Along these same lines are several studies, such as Dustin and Davis (1967), which found that highly authoritarian leaders tended to use negative sanctions and punishment significantly more often than did less authoritarian leaders as a means of inducing performance in subordinates. Although the less authoritarian leaders used reward more often, this difference was not significant; however, the less authoritarian leaders chose "no sanction" as an option significantly more often than did their more highly authoritarian counterparts. Given this fairly reliable finding that leaders with different styles

tend to differentially use reward and punishment, and given Rothbart's (1968) findings that show that the use of punishment rather than reward may itself lead to particular patterns of attribution, there is a logical link which needs to be examined. This is the link between leadership style, operationalized as leader goal, and attributions of subordinate performance. However, attributions and use of incentives are only two of a variety of information processing measures which should be examined in this context. The same logic can be applied to several other measures, again in an attempt to gain an understanding of the effects of leader goal on a leader's information processing, in particular with regard to a poorly performing subordinate.

Performance Appraisal

In the performance appraisal literature, the issue of effects of leader goal on ratings has also been mentioned and suggested as an important one, although, again, it has not been directly addressed. Interestingly, although researchers in the area of performance appraisal have noted the need to examine the effects of rater characteristics on ratings and other performance-related judgments, the characteristics studied have generally been demographic in nature, as mentioned above (e.g., Huber, Neale, and Northcraft, 1987) (see p. 10). Again, these were characteristics such as age and sex. The proposal here is that other as yet unexamined rater characteristics might also have a significant effect on the performance appraisal process. Such characteristics include leader goal and its corresponding impact on information processing. Because demographic characteristics have been found to affect appraisals, it seems logical to expect that other characteristics of the rater, such as the way in which he/she feels about, views, and deals with employees, might also have an effect. Importantly, it is not clear whether leader goal might affect

the appraisal process in the same way as demographic characteristics do, or whether there is a more indirect link, in which demographic characteristics affect leader goal, which then affects the appraisal process. This is an important issue, but one which is beyond the scope of the present project.

Landy and Farr (1980) review the variables which have been found to affect performance ratings, of which several are rater characteristics. Again, these tend to be mainly demographic (e.g., sex, job experience, etc.). However, some more cognitively-oriented characteristics are noted as well, such as cognitive complexity of the rater. Also mentioned is the fact that production-oriented raters tend to be less lenient than do interaction-oriented raters. The former have also been found to pay more attention to planning activities than the latter. This suggests that leader goal has important implications for the type of information attended to as well as the importance or weight placed on the information.

This suggestion fits in well with models of the performance appraisal process (e.g., Cooper, 1981; Feldman, 1981) which focus on the appraiser's information-processing system. These models point out that a rater's schema is a critical determinant of the manner in which the appraisal will proceed. Such schemas can systematically bias the rater's evaluation of information. The issue here is one of the origins or components of such schemas. Since the person whose schema is being discussed is the leader, it makes sense to examine whether leader goal is one important determinant of the schema, which is then used as an organizing principle to process information about subordinates. If this is the case, then leaders with different goals might be predicted to rate and assess subordinates with identical performance records in different ways.

However, although this issue has been implied or indirectly suggested in most of the recent reviews and models of performance appraisal, it has not been empirically examined. In the 1990 edition of the Handbook of Industrial and Organizational Psychology, Borman sums up our current (lack of) understanding of this issue when he states the following as a hypothesis for future research to tackle: "A rater's personal constructs influence the behaviors that are noticed, recorded, and evaluated; behaviors that are not part of or are inconsistent with the rater's personal construct theory are ignored, distorted, or discounted" (p. 300). Substituting the words "leader goal" for the words "personal constructs" and "personal construct theory" in the quote above yields the basic premise underlying the present research project.

The Metamorphic Effects of Power

Kipnis (e.g., 1987), in his studies of power, has offered a fascinating theory of how power might affect the powerholder. Many of the fundamental ideas on which his theory is based are similar to the ideas on which the current study rests, and studies of his theory represent the research which is most similar to the project proposed here. The theory also seems to stem directly from Rothbart's (1968) conclusion that an individual's behavior toward another can structure his/her perceptions of the other's intentions. Kipnis' theory essentially extends this finding to the power arena.

Kipnis' theory on the "metamorphic effects of power" (e.g., Kipnis, Castell, Gergen, & Mauch, 1976) stems from the astute observation that "the focus of psychological research and practice has been on the target of influence, rather than on the influencing agent" (Kipnis, 1987, p.30). His belief was that this imbalance needed to be addressed, particularly with regard to powerholders. The idea that exercising power over another person could lead to important

changes in the powerholder has been around at least since the ancient Greek philosophers, according to Kipnis et al. (1976). Common sayings such as "power corrupts" and "power can go to one's head" suggest that this is a common-sense "truth" that we all take for granted without having much research to provide specifics. Kipnis' theory examines the manner in which the successful exercise of power can change the powerholder's evaluations of the target person, and in some cases self-evaluations as well.

There are several important variables in this theory. These are the powerholder's resources, the frequency and type of influence tactics which the powerholder uses, the causal attributions made by the powerholder concerning who controls the target's behavior, the evaluation of the target, the preferred social distance from the target, and the powerholder's self-evaluation. The basic model bringing these variables together is as follows: With control of resources there is an increase in desire to influence others' behavior. If a powerholder uses what Kipnis (1976) refers to as strong tactics (described below) and if compliance follows, then there is a tendency for the powerholder to believe that the compliant behavior of the target is not self-controlled but rather has been caused by the powerholder. This then results in a devaluation of the target's abilities, a preference to maintain social/psychological distance from the target, and a corresponding increase in the favorability of the powerholder's self-evaluation.

As indicated above, an important part of the model hinges on what type of influence tactics the powerholder uses. This is because, in attribution theory terms, the issue for the powerholder will be whether the cause of the target's compliance is the target or the powerholder him/herself. The theory suggests that the powerholder will decide who is the more likely cause of the target's

behavior by reflecting on the means of influence used. To the extent that strong and controlling tactics (such as threats and promises) are used, the powerholder is likely to believe that s/he was the cause of the target's compliant behavior. Similarly, if weaker means of influence (such as suggestions and simple requests) are used, the powerholder is more likely to believe that the target decided on his/her own to comply. Kipnis and his colleagues have conducted several studies to empirically examine the proposed link between strong means of influence and attributions of causality, in several different types of situations.

For example, Kipnis (1972) had undergraduate subjects act in the role of a manager in a business simulation. They were told that they were supervising other students in another room, although in fact there were no subordinates and the "work" done by these subordinates was preprogrammed. Half of the subjects were told that they could use any of a large number of tactics, most of which were "strong", in dealing with their subordinate. The other half of the subjects were given no power tactics to use and could rely only on personal powers of persuasion. All "subordinates" in the study performed at a satisfactory level and improved performance over trials. Among other measures, subjects were later asked what they believed to have been the cause of the subordinates effective performance, and it was found that significantly more of the subjects without power attributed their subordinates' performances to the subordinates' own motivation. Similar results were obtained in two field surveys (Kipnis, Castell, Gergen, & Mauch, 1976), one involving married couples and spouse's beliefs regarding what types of tactics were used to "get one's way" and attributions of the partner. The other survey involved housewives, the tactics they used with their maids, and attributions of

maids' performance. Both of these studies used correlational data, and thus cannot provide evidence of a causal nature regarding the consequences of successful use of power. However, both found systematic relationships between the kinds of influence attempted and the attributions and evaluations made by the powerholders.

Kipnis' theory and research is directly relevant and very important to the current research project for a number of reasons. The first is that this work represents practically the only prior research in the field to examine the effects on the influencer of influencing another. (As mentioned earlier, one other body of work which has attempted to study this issue is that of Jones and his colleagues in their research on perceiver-induced constraint). Kipnis also recognized the lack of research in this area, noting that "there has been very little research in psychology concerned with how the control of power may influence the powerholder's views of both himself and the less powerful" (Kipnis, 1972, p. 33). In the more than twenty years since that statement was written, very little has changed in that regard. The second reason that Kipnis' work is relevant to the current research project is that in his more recent work, Kipnis and his colleagues (and others following up on his ideas) have directly addressed the idea that leadership style may play an important part in his theory of the metamorphic effects of power.

Actually, the role which leadership style might play in terms of Kipnis' theory is just an extension of the theory's basic ideas as described above. Recall that an important part of the model addresses the types of influence tactics which a powerholder uses, and specifically whether they tend to be strong, controlling tactics or weaker, more accommodative tactics which offer the target more latitude in deciding what to do. From this it follows quite

logically that different styles of leadership should be compared, in particular those which by their very nature incorporate use of one type of tactic or another.

To this end, Kipnis, Schmidt, Price, and Stitt (1981) compared autocratic and democratic leadership styles. In their study, they had undergraduate students act as leaders and subordinates. Each leader had five subordinates in his/her group, and the task involved simple model-building. Leaders were given instructions telling them to use one of the two leadership styles in leading their group. Autocratic leaders were essentially told to make all decisions for the group, using no consultation and in fact allowing no one else in the group to offer an opinion. If someone tried to give an opinion, the leader was told to interrupt him/her, and in general to be dominant, aggressive, forceful, and controlling. Democratic leaders were told that all decisions had to be made by the entire group, no matter how long this took. The basic strategy this leader was told to pursue was to get and maintain the involvement of every member of the group. The leaders then actually went through a planning phase and a production phase with their groups, after which measures were taken of the kinds of influence tactics actually used, performance level of the group, leader's attributions of subordinate performance, and leader's evaluations of subordinates' performance.

The authors report that the manipulation appeared to have been effective. In terms of results, a path analysis indicated that leaders who used controlling influence tactics reported that their subordinates were not self-motivated, whereas leaders who used noncontrolling tactics attributed their subordinates' performances to self-motivation. Importantly, no direct path was found to exist between leadership style and evaluations of subordinates. Rather, these evaluations were mediated by both influence tactics and leaders'

assessments of subordinates' motivations. It is necessary to point out that although mean performance levels of groups with the two different leadership styles are not provided in the article, it is stated that nearly all of the groups in the study performed at satisfactory levels. Therefore, although this study is interesting and its implications are important, it is impossible to generalize its findings to the many situations in which performance of a subordinate is less than satisfactory.

The fact that differential performance of subordinates might alter these findings in important ways was the focus of a dissertation by Festa (1991). However, although he seems to have recognized that this was an important issue, he did not in fact investigate this specific issue. Rather, in a follow-up to the study described above by Kipnis, Schmidt, Price, and Stitt (1981), Festa manipulated leadership style in the exact same way that the earlier authors had. In fact, Festa used the precise scripts used in the Kipnis et al. study as instructions to his autocratic and democratic leaders. As in the earlier study, Festa had these undergraduate leaders actually work on a task with other subjects who were the subordinates. Thus, again, the performance level of subordinates was not manipulated, and again, nearly all of the groups performed at a satisfactory level. Additionally, there was no difference in the performance level of groups who had leaders with different styles. However, the other variable to be manipulated in this experiment was <u>reported</u> group performance. In other words, although leaders went through the task with their groups and were able to observe their performance, they were later given bogus performance information such that performance was said to be low, average, or high. The leaders were given these performance cues on a random basis, regardless of how their groups had actually performed. (This was a

between subjects design, with leadership style orthogonally crossed with bogus performance information.) Festa hypothesized that autocratic leaders would show the metamorphic effects more than would the democratic leaders, and more in the conditions of low performance information, but the data failed to support the hypotheses. Although there was a main effect for reported group performance, this variable failed to show the expected interaction with leadership style.

Although the two studies just described (Festa (1991) and Kipnis, Schmidt, Price, and Stitt (1981)) are, to date, the most similar research in the literature to the present study, and as such merit careful review, it is important to point out four critical differences between these studies and the present project. (These four are in addition to the obvious difference, which is that the previous studies examined leadership *style* as a broad concept, whereas the present research focuses more specifically on leader *goal*.)

The first difference relates to the point made above about performance level variation: Neither of the two previous studies varied performance level of the subordinates. Kipnis et al. simply did not deal with this issue, and Festa dealt with it by manipulating bogus performance information rather than true performance level. In light of the particular theory they were both testing, this was perfectly logical. Recall that a crucial part of the "metamorphic effects" theory is that the target person's behavior is compliant to the powerholder's influence. In other words, the whole theory hinges on the fact that the target, in this case the subordinate, actually does what the leader wants him/her to do, and the issue then is in what way the leader attributes this effective performance. The theory, then, really does not address what happens if the subordinate does not perform at the requested or required level, and therefore it

makes sense that in a pure test of this theory, the "low performance" issue is not addressed. But because the present study does not test any particular theory, and does not test the effects of power per se, but is instead concerned with the effects of different leader goals, it is critical to actually vary true performance level. Variation in performance level, including some workers whose performance is poor or unsatisfactory, is also probably closer to a real-world scenario than is inclusion of only high performing workers.

Related to the performance level manipulation is a second difference between the two studies described above and the present project. Both Kipnis et al. (1981) and Festa (1991) had their leaders actually interact with other subjects, who were in the role of subordinates. Because these were other subjects, and not confederates, their performance level could not be manipulated, and in fact all performed well. In order to manipulate performance level, it is necessary to either use confederates or have a "fake" subordinate with preprogrammed responses. The latter is the manner in which the current study will be run. The other major difference in having leaders actually interact with subordinates in a task is that the interaction itself can have an effect on the leader and change his/her behavior and/or information processing in important ways. Because each leader is interacting with a different set of subordinates, it is then possible that each is being influenced in different ways. In addition to the social influence which can take place in such an interaction, other confounds are introduced such as subordinates' gender, race, age, etc. Certainly it is important for research of both kinds to be done; that is, it is necessary for us to be able to look at the reciprocal influence process between leader and subordinate, but it is also necessary (and, to this author, a prerequisite) for us to be able to examine the nature and effects of leader goal

per se, unconfounded from the effects of interaction with subordinates. To date, no research has been done which can address this issue.

The third and fourth important differences between the Kipnis et al. (1981) and Festa (1991) studies and the present experiment involve the exact nature of what is under investigation. As discussed above, the interest of the earlier studies was on power and its effects. The emphasis here is on leader goal, which is more a question of how power is utilized, rather than the power itself as a separate entity. This relates to the fourth difference, which is that the earlier studies compared leaders who were autocratic and democratic, whereas the current study will compare leaders who have goals to either gain high performance or satisfaction from their worker. Although this may seem like a trivial point, in fact these different categorizations for leadership style or goal have completely different emphases, as discussed above in the section on different ways of viewing leadership style. As noted at that time, the major difference is that the autocratic/democratic distinction deals essentially with how employees are treated and, at least as described in the studies by Kipnis et al. and Festa, how decisions are made (by the leader alone or by consensus). The distinction between the two leader goals in the current study goes back to the essential task-orientation/relations-orientation distinction, which deals with the types of information to which the leader pays attention.

Also important in terms of instructing subjects to act as one type of leader or the other is the fact that there seems to be a value judgment attached to the leadership style labels and descriptions. The way in which the autocratic leadership style is described to subjects in the above studies is extremely negative-sounding, and especially from the point of view of our democratic society, it seems a bit unrealistic to expect that subjects will not have a negative

reaction to a request to act essentially like a dictator. In fact, there seems to be some confirmation of this problem when Festa (1991) states in his conclusion that "the autocratic style leaders may not have been comfortable with their assigned style" (p. 175). It is critical to compare leadership styles or leader goals which do not elicit this type of value judgment and negative reaction from subjects. Importantly, there is no reason to believe that there is anything inherently "good" or "bad" about high-performance and satisfied-worker goals.

SUMMARY

Recent work in social psychology and social cognition has demonstrated the importance of examining the particular goal or "mindset" with which a perceiver enters an interaction with another. Research on goal-based or motivated processing has shown that such goals can significantly effect the manner in which information about a target is processed. This research, along with the facts that a) leaders in organizations might be particularly prone to these types of effects because they need to find ways to minimize the amount of information with which they must deal, and b) years of research on leadership style has demonstrated that different leadership styles differentially effect subordinates, indicates that a critical link has gone unexamined. This involves the effect of leadership style on the leader him/herself, and particularly on the way in which s/he processes information about subordinates.

Leadership style, in its more specific, "pure" form, can be viewed as a goal similar to many of those studied in the research on goal-based processing and described earlier. The present study focuses, therefore, on leader goal. Researchers in the areas of performance feedback and performance appraisal have suggested or implied that leader goal might play an important role in these processes, but the issue has not been directly addressed. A few researchers

have come close to addressing the issue; these are Rothbart (1968), who studied the effects of giving incentives on attributions of the subordinate, Aronson and Jones (1992), who compared the effects of two different tutoring goals on beliefs about the student, and Kipnis and his colleagues (e.g., Kipnis, Schmidt, Price, and Stitt (1981)), who studied the metamorphic effects of power. All of these experiments have indicated that there is great potential for this type of research, and, in every case, there are important implications for and applications to "the real world". Based on all of this evidence, it is proposed that leaders with a high-performance and those with a satisfied-worker mindset will approach their subordinates differently and will process identical subordinate performance and behavior information in different ways.

INFORMATION PROCESSING

The term "information processing" can refer to a variety of measures, and, to a great extent, the measures which are appropriate to assess information processing in one context will not be the same as those which are appropriate in another. In general, information processing within the social cognition literature includes certain stages through which an information processor is believed to proceed in order to perceive and respond to a stimulus. First, the perceiver must attend to the stimulus and encode it. Encoding is the process through which an external stimulus is in some way transformed into an internal representation. Next, the stimulus can be stored in memory. Research in the area of person memory has clearly demonstrated that one's particular task, purpose, or goal can have a significant effect on the information that is later recalled. Finally, perceivers make inferences about social stimuli. This involves deciding what information is relevant or useful and then combining this

information in some way. Such inferences can include judgments, decisions, actions, and attributions.

Thus, in order to examine cognitive processing of information in a particular setting such as the one under examination, it is necessary to think about the specific independent variables under study, and determine what measures would most likely be sensitive to differences in those variables. The dependent measures that were used in this experiment will be briefly described, along with the rationale for their use. Each of these measures will be described in detail in the Methods section below.

The amount and type of instructions or other communications that the subject (leader) gave to the worker was examined. There is nothing particularly subtle or mysterious about these "communications" measures, but rather it simply seemed important to look at the effect of a leader's goal on the leader's communications to the subordinate. This measure can offer insight into how the leader views the worker by indicating the amount of detail in communications which the leader feels it necessary or important to give.

Attributions that the leader makes for the worker's performance are another important measure. One reason that this is important to examine is that the three studies in the literature which are most similar to this experiment, noted above (Rothbart (1968), Aronson and Jones (1992), and Kipnis, Schmidt, Price, and Stitt (1981)), all measured attributions. Beyond that, this is perhaps the most critical dependent measure because it might help to explain any other differences which are found between the leader goals. For example, leaders with different goals might attribute identical behavior differently and thus label a worker as either "lazy" or "overworked or tired" depending on those attributions. The importance of examining attributions in studies of leadership is indicated in

a model of leader-member interactions by Green and Mitchell (1979), in which attribution theory is utilized as a "vehicle for describing and understanding the causes of leader behavior" (p. 430). Their approach argues that leaders' reactions to subordinates can be better understood and predicted by examining what leaders' causal explanations are for subordinates' actions.

Measures of attribution are especially interesting in combination with another measure, the selection of incentives to offer the worker. Green and Mitchell (1979) state hypotheses regarding attributions and use of incentives, and their idea is essentially the opposite of the conclusion reached by Rothbart (1968) and discussed earlier. Green and Mitchell state that a leader's evaluation of performance and his/her rewarding or punishing behavior will be strongly influenced by effort attributions concerning the worker's performance. Recall that Rothbart essentially concluded that a leader's effort attributions concerning the worker's performance might very well be strongly influenced by his/her use of incentives. Although the effect of attributions on incentives and the effect of incentives on attributions is a different issue than the one under examination here, the present experiment was able to look at both of these measures (attributions and incentives) and assess how leader goal affects each.

Memory is another important measure of information processing used here. Subjects were asked for their recall of various parts of the task following its four trials. This is a way of assessing the importance that leaders with different goals place on various components of the task. The underlying assumption with this kind of measure is that subjects will exhibit better recall of information which they have previously determined to be more important, and to which they have therefore paid more attention. This assumption is based on the

"levels of processing" theory of memory from cognitive psychology. For example, Lockhart and Craik (1990), in a review of this literature, describe how information which is processed at a "deeper" or more "elaborative" level will be better remembered. They state that, in examining variables in the lab which have been found to affect memory, "major effects on remembering could be obtained merely by influencing the form of perceptual or conceptual analysis that the subject performed on the material to be remembered, and that, furthermore, such variation in conceptual analysis is precisely what characterizes everyday goal-directed cognition" (p. 89). This is very much like the kind of goal-based processing which was described earlier, and of which it is proposed that leader goal is an example. Differences in memory thus may indicate what kinds of information different types of leaders process more "deeply".

Finally, leaders were asked what information, other than what they had gleaned throughout the interaction with the worker, they would have wanted to help them better understand the worker. They chose items from a list of items which could be categorized as being particularly relevant to gaining high performance or a satisfied worker (or irrelevant to either of the two categorizations). Information seeking is a measure which is important to understanding how different "mindsets" affect an individual. In a sense, it goes beyond examining what cues subjects focus on and how they emphasize these cues, to asking what cues they would have found useful if they could have had them. It is a way of assessing how subjects would go beyond the information given, if they could. The underlying idea behind this study is that these leaders look for and interpret information in different ways. A measure of information seeking might be able to offer some insight into what these different ways are

and how they function. As the Methods section (below) will make obvious, the present experiment is not ideally suited to investigate an information seeking measure. However, the measure which was included can be described as a hypothetical information seeking measure.

OVERVIEW OF THE EXPERIMENT

Subjects (undergraduate students) played the role of leaders in this experiment. This was a laboratory study which had the advantage of maintaining tight control over all aspects of design, particularly with regard to interaction between the leaders and workers and the workers' behavior. Subjects were instructed to approach the task and the worker with a particular leader goal, either high-performance or satisfied-worker. Each subject-leader had a (fictional) worker with whom he or she worked throughout the experiment, which consisted of four trials of a task. The leader, in each trial, gave the worker typed instructions about what the worker should do, and then the leader received typed responses and comments from the worker for each trial. Workers either performed well or poorly, and expressed either satisfaction or dissatisfaction with the task. Following the four trials, subjects filled out several questionnaires. Dependent measures included amount and type of instructions and other communications given to the worker, incentives chosen for the worker, information seeking, attributions of worker performance, recall of various worker-relevant measures, worker performance ratings, and worker satisfaction ratings.

HYPOTHESES

In general, the hypotheses are based on the premise that leaders with a satisfied-worker goal will be more concerned about the workers' interest in the task and those with a high-performance goal will be more concerned about the

workers' performance at the task. However, in most cases it is hypothesized that performance level will moderate these differences. That is, a satisfied-worker leader with a poorly performing worker will begin, over trials, to be more like a high-performance leader. This is based on conclusions of several researchers (e.g., see Bass, 1990) that decreasing performance of subordinates in a lab setting causes leaders to become more task-oriented. Specific hypotheses are as follows, listed by (numbered) dependent measures:

1. Communications given to the worker: In terms of sheer quantity, leaders with a satisfied-worker goal will write more in their instructions and communications to workers than will leaders with a high-performance goal. Because they will want the workers to maintain interest in the task, satisfied-worker leaders will tend to give more detailed and extensive communications. This leads directly to a hypothesis about the content of instructions and other communications. Satisfied-worker leaders are expected to offer workers more detail about the task and the situation which drives it. For example, they may explain what specifically the client wants to accomplish and why the task is therefore important. Because high-performance leaders will aim to be brief and to the point, they will tend to omit any detail in their communications which is superfluous to explaining the task in precise terms. However, it is also hypothesized that, regardless of leader goal, leaders with a poorly performing worker, over the four trials in the task, will begin to omit any unnecessary detail. Thus, for the poor performer, communications will become more brief and include less explanation about clients, investments, and other unnecessary information. Finally, satisfied-worker leaders with a worker who was dissatisfied with the task may offer more detail than they do with a worker who did express

satisfaction with the task. This would be an attempt to pique the dissatisfied worker's interest.

2. Use of incentives: With a poorly performing worker (as compared to a high performer), all leaders will be more likely to use punishment as an incentive. Therefore, a main effect of performance level is predicted such that punishment is selected more often for low performers then for high performers. This is based on findings (e.g., Rothbart, 1968) that subjects regard punishment as a stronger force than reward, and if a subordinate is not performing well, leaders are likely to choose the incentive that they perceive to be strongest. However, this should be more true of the high-performance leaders because of their greater concern with performance. In addition, satisfied-worker leaders will be less likely to use punishment because their major concern is that the worker enjoy the task, which would seemingly not be accomplished by using punishment. Therefore, a main effect of leader goal on punishment is predicted, in which HP-goal leaders select punishment more than do SW-goal leaders. Nevertheless, it would be illogical for any leader to continually reward poor behavior and, therefore, satisfied-worker leaders with poorly performing workers will tend to use "no sanctions" more frequently than will any other group. In this case, an interaction of leader goal and performance level is predicted for use of no sanctions. This is loosely supported by a finding described earlier by Dustin and Davis (1967) that low-authoritarian leaders used positive sanctions slightly more frequently than did high-authoritarian leaders, and the former used "no sanctions" significantly more frequently than did the latter.

3. Information seeking: When asked to select seven items in a list of twenty-one items of information which they would be most interested in having if they could, high-performance leaders will seek more performance-relevant information and satisfied-worker leaders will seek more worker-relevant information, as categorized according to the definitions used throughout the experiment (and the literature). However, satisfied-worker leaders with a poorly performing worker will seek more performance-relevant information, and less worker-relevant information, than will satisfied-worker leaders with a high performing worker. Finally, high-performance leaders with a high-performing worker who is unhappy with the task may seek more information which is worker-relevant or irrelevant to either style. This is because once a high-performance leader feels that s/he has accomplished the major goal of getting the worker to perform at a high level, s/he may begin to wonder why the worker is dissatisfied with the task.

4. Attributions of subordinate performance: Based on findings related to the "metamorphic effects of power" theory, it is hypothesized that with a high performing worker, satisfied-worker leaders will attribute performance more to the worker's effort than will high-performance leaders. Again, this is because, according to the theory, a leader's use of more directive and controlling tactics leads to a belief that these tactics caused the worker to perform well. This is obviously based on the assumption that more directive leadership involves use of "stronger" tactics.

Otherwise, the important attributional differences are those regarding attributions of performance for the poorly performing worker. Based on the hypotheses regarding use of punishment, combined with Rothbart's (1968)

conclusions, it is hypothesized that high-performance leaders will tend to attribute poor performance to low effort whereas satisfied-worker leaders will tend to attribute poor performance to low ability.

Other differences in attributions are also expected based on performance level and satisfaction level of the worker. For example, when the worker performs well, leaders will attribute performance more to their own leadership. When the worker performs poorly, leaders will attribute performance more to difficulty of the task. When the worker performs poorly and has not enjoyed the task, leaders will attribute performance more to the worker's attitude toward the task.

Beyond this, it is expected that there will be other attributional differences between the two types of leaders, and interactions with performance level and satisfaction level. However, these differences are not specifically hypothesized because this is largely exploratory. Given the complexities of attribution theory and the fact that there is no previous research comparing attributions of leaders with different goals (other than the Kipnis research) on which to base hypotheses, it would be largely guesswork to make more specific predictions at this time.

5. Recall: Subjects will be asked to recall four types of information from each of four financial analysis trials.

a) Recall of what the specific task or situation was for each trial: Based on the hypothesis regarding depth of instructions and other communications which subjects give to their workers (see #1 above), it is hypothesized that when asked to recall task information, satisfied-worker leaders will tend to recall information regarding the particular needs of clients in each of the trials. This is

because they probably will spend more time explaining this aspect of the trial to workers, whereas high-performance leaders will likely skip over these details as superfluous to the task. Therefore, it is also predicted that high-performance leaders will tend to recall the specific types of calculations and the exact nature of the task in each trial, since this is the part of the trials on which they will tend to concentrate.

b) Recall of whether the worker got the correct answers for each trial: High-performance leaders should more accurately recall performance information, although the performance level manipulation is so strong (high/low performing workers get three problems out of four correct/incorrect, respectively) that there may be a ceiling effect on recall of this measure.

c) Recall of comments the worker makes following each trial: Satisfied-worker leaders should have better recall of these comments. The comments are for the leader's information only and not necessary to do the task, and for this reason it is predicted that high-performance leaders will not pay much attention to them.

d) Recall of the incentives the leader selected following each trial: High-performance leaders should exhibit better recall of the incentives chosen. This is because the whole point of incentives is to boost performance, which is also the focus of high-performance leaders. It is important to note that for any of these recall measures, leader goal might interact with performance level and/or satisfaction level in ways which are speculative at this point.

6. Ratings of worker satisfaction: A main effect of satisfaction level is expected such that satisfied workers are rated as being more satisfied than dissatisfied workers.

7. Ratings of worker performance: A main effect of performance level is expected in which high performing workers are rated as having better performance and more competence than poorly performing workers. (This is also a manipulation check on the performance level manipulation.) Furthermore, there may be an interaction with leader goal in the following manner: Leaders with a high-performance goal may rate performance more severely with a poorly performing worker than do leaders with a satisfied-worker goal. This is because the former should focus almost exclusively on performance, and therefore may weigh performance level information more heavily.

METHOD

Subjects

Subjects (N=96) were undergraduate students at Rice University who received course credit in return for their participation. Subjects participated one at a time, with each session lasting for approximately one hour to 90 minutes. Of the 96 subjects, 58 were female and 38 were male.

Experimental Design

The experiment employed a 2 x 2 x 2 between-subjects design. The first independent variable was leader goal, which was either high-performance or satisfied-worker. The second and third independent variables involved two different aspects of the worker's success or failure at the task. One variable was the performance level of the worker, which was either high or low: The worker either did well at the task, getting predominantly correct answers, or did poorly, getting most of them wrong. However, there is another important aspect of success and failure with regard to the two leader goals and what the leaders

are trying to accomplish. Thus, the third independent variable was a manipulation of whether or not the worker expressed satisfaction with the work and appeared to gain some kind of personal benefit from it.

Because the two leader goals, among other things, involve striving to bring out different kinds of behavior and feelings from the worker, it seems reasonable to assume that the leader would measure his/her own success in different ways. For the high-performance, more production-centered leader, success would most likely be measured by how well the worker performs the task, as indicated by the number of trials correctly answered. Thus, it was important to give this type of information to the leader. However, for the satisfied-worker, more employee-centered leader, success might be measured as the extent to which the worker enjoys the work and feels a sense of personal accomplishment. Thus, this type of information was also necessary. Therefore, these two different types of success and failure were independently manipulated, along with leader goal.

The experimental design resulted in eight cells, across which the 96 subjects were evenly distributed. Thus, n=12 for each of the cells in the design. Although the total number of females (n=58) and males (n=38) in the experiment was not equal, care was taken to ensure that the distribution of females and males was even across cells. In other words, of the twelve subjects in each of the eight cells, seven or eight of the subjects were female and the remaining four or five were male. Beyond this stipulation, subjects were arbitrarily assigned to condition.

Dependent measures included amount and type of communications which the leader gave to the worker, incentives selected to motivate the worker, information seeking, attributions of worker performance and impressions of the

worker, recall of various information (to be described below), ratings of the worker's satisfaction with the task, and ratings of the worker's performance.

Leader Goal Manipulation

A series of pilot tests was conducted in order to ensure that the basic scenario around which the experiment revolves would be believable to subjects and would have the intended effects. The resulting procedure was somewhat complex but effective. The supervision portion of the experimental session was completed on a Macintosh computer using Hypercard. Each session began with a series of instructions read aloud to the subject by the experimenter, in which the subject was informed that s/he would be supervising a worker in a financial analysis task, and that s/he, as the leader in the task, would communicate with his/her "worker" by typing instructions into the computer and pushing a "Send" button. After the worker had completed the task specified in the instructions, the subject would receive responses and comments from the "worker" in a similar fashion; that is, the "worker" would send communications to the subject when they were complete, and these communications would show up on the subject's computer screen.

In pretesting, several attempts were made to convince subjects that an actual subject was working with them. However, regardless of the manner in which this was done, subjects remained suspicious and seemed to be spending time and effort to figure out whether this was true, rather than doing the task. This distracted subjects from the actual manipulation of leader goal as well as the task, and therefore in the final version of the scenario, it was explained to subjects that there was in fact no actual worker present at that time. Rather, everything that the subject typed into the computer during the session would be sent by the computer to, and read by, a research assistant of the experimenter's,

who would then select appropriate responses from a pool of possible responses. Again, the precise wording of these instructions proved, through pilot testing, to be critically important in terms of being both feasible to, and effective for, these subjects. For this reason, the relevant section of the script read to subjects at this point follows (in addition, the instructions-to-subjects in their entirety are included in Appendix A.):

> "As you go through the task, you will tell this worker what to do for each of four trials, and each time, the worker will try to do what you said, and you will receive responses and comments from the worker. As I said, there is not really a worker, but let me tell you what is really going on. I ran a large population of pretest subjects, including Rice students, high school students, & students from University of Houston through the worker's task, and from this I got a large pool of responses to each trial of the task, plus a pool of comments a worker might make during the task.
>
> Your computer is hooked up to a computer down the hall, and my research assistant will be selecting responses and comments from this pool of possible options and the ones chosen will be sent to you on the computer as if they are from your worker. The answers chosen to be sent to you will be based in part on the task instructions you give for each trial. In other words, what you do is important because answers will be chosen which are appropriate to respond to what you do. For the remainder of the experiment, whenever I say "worker", understand that this does not mean a person who is here now, but that I am asking you to try to go through the experiment as much as possible as if you were really interacting with a worker."

In fact, there was no research assistant, and all responses which the subject received from the worker were pre-programmed into the computer and were entirely dependent on the subject's condition. This deception regarding the presence of a research assistant was necessary so that subjects would actually feel that they were in the role of a leader, and that the manner in which they interacted with and instructed their workers was important. As opposed to simply observing a worker's performance which had no personal relevance to

the subject, this procedure incorporated the element of interaction between leader and worker. This interaction may be crucial in eliciting the kinds of effects of interest here (cf. Aronson & Jones, 1992). Informal data and observations made by the experimenter provided evidence that subjects felt truly involved in the task and with their "worker". For example, subjects with a poorly performing worker witnessed this worker getting three consecutive answers wrong, and finally, on the fourth trial, getting a correct answer. In many cases, subjects in this condition were heard to make sounds of triumph upon receipt of their worker's correct answer.

No information regarding the worker's race or gender was made available or in any way implied at any time during the experiment.

The leader goal manipulation was also given in the form of instructions read to the subjects. They were told that although literature in leadership has described two different leader goals, high-performance and satisfied-worker, this experiment and research project was solely interested in one of these. The specific goal that sucjects were told we were interested in depended on the condition into which subjects had been placed. They were then asked to try to keep that type of leader goal in mind and to try to use that leader goal (either high-performance or satisfied-worker) throughout the experiment. Detailed descriptions and examples of behaviors typical for their particular leader goal were offered to indicate exactly what that leader goal meant in behavioral terms. Again, these instructions and descriptions are shown in Appendix A. Additionally, subjects were given a 3 inch by 5 1/2 inch sheet of paper on which was listed the leader goal followed by the descriptions of that goal. This sheet of paper was taped to the bottom of the computer on which the subjects worked, and was constantly in view as they went through the supervision task with the

worker. Subjects were shown this sheet of paper and told to feel free to refer to it at any time. This was intended to strengthen the leader goal manipulation and ensure that subjects would continue to keep their specific leader goal in mind.

Experimental Task

Next, the exact task was explained to subjects. Since the subject's task was to supervise the worker on the task on which the latter was working, the worker's financial analysis computing task was explained. It was described as being fairly simple but involving a lot of "busy work" and many different steps. This particular type of task was selected and constructed because the many steps increase the likelihood that errors could be made at any of a number of points along the way. It also allowed the leader a great deal of leeway in terms of how to instruct the worker. Although the task was described as being very important, it was also described as being very time consuming and, as indicated, simplistic. For these reasons, it was explained that a leader him/herself would not have the time to do the task and thus the worker would be asked to do it.

The task consisted of four trials, each independent of every other. The basic task in each trial began with a matrix of numbers with several rows and columns. This matrix was on a sheet of paper given to the subject. All of the matricies are shown in Appendix B. The columns of the matrix were said to represent clients of the financial analysis company for which both the subject and the worker were doing this job. In some trials, the columns represented different clients, whereas in others they were said to be the same client over a number of years. However, in every case, the columns were marked only with consecutive numbers. Rows of the matricies were said to represent particular

stocks in which money for these clients was invested, and they were marked only with consecutive letters. The leader (subject) was given, for each trial and on the same sheet of paper as each matrix, detailed information about the actual clients or years matched up with the numbered columns in the matrix, as well as about the exact investments represented by the different lettered rows. Subjects were told that although the worker was provided with the identical matricies, the worker was given only the matricies, and not any of the extra information. The implication was that unless the leader chose to communicate to the worker about the specific details, the worker would be working only with the letters and numbers of the matrix rather than any specific client and stock details.

Within the cells of each matrix there were numbers said to represent the amount of profit made by a particular combination of client and stock. Numbers were either positive, negative, or the cell was blank to indicate that the combination did not occur. Underneath the matrix on the same sheet of paper, a situation was briefly described involving the combination of clients and investments in that matrix. The situation required that a particular task be completed to answer a client's question or resolve an issue. In order to complete the task, it was indicated that certain calculations were needed from the matrix. For example, one task required calculation of the difference between the overall profits of two particular clients in a matrix of eight clients. The two to be compared were described as having extremely different investment strategies, and the idea of the task was to be able to compare the profitability of these two differing strategies. Subjects were told that workers did not have any information about the task required for each matrix. The worker was described as having only the actual matrix of numbers.

Once the subject had read and understood the task and the matrix, s/he was asked to communicate the required calculations to the worker using the computer, simply typing in the instructions in no particularly prescribed manner or time-frame, and typing as much or as little as s/he wanted. These communications were collected as dependent measures; quantity of communications was available (counted as the number of words used), and the communications themselves were content analyzed to examine various qualitative aspects. As indicated above, the leader was free to decide how much and what kind of detail to communicate to workers. In the example mentioned above regarding comparison of two different clients with extremely different investment strategies, a leader could simply ask the worker to sum the numbers in two different columns and provide the leader with those sums and the difference between them. On the other hand, a leader could tell the worker that the columns represent the profits of two clients, that these clients have used different investment strategies, and could even explain what these strategies are, before asking the worker to provide specific calculations. The amount and type of context leaders chose to provide to workers therefore was an interesting and important dependent measure.

Performance Level Manipulation

At the bottom of each matrix sheet, subjects were provided with the correct answers to the problem. The answers were covered over with another sheet of paper and subjects were told that in order for them to know how the worker was doing, they might want to check the worker's answers. They could do this by figuring out the calculations themselves, but they were told that they would not need to do this because the answers had already been calculated

and would be visible to them simply by lifting the sheet of paper covering the answers. This was done so that the subject had to make at least a minimal effort to check the worker's answers, but yet did not have to waste a lot of time calculating them. The fact that some effort was required makes the task seem more "leaderlike" than it would if the answers were more easily accessible. The fact that little effort was required to check the answers insured that all subjects would in fact check the answers. This was necessary so that they would be well aware of how the worker was doing, which comprised the performance level manipulation.

After typing in the instructions and pressing a button to "send the instructions to the worker", the leader was told that s/he could start looking through the next matrix and determining its requirements. After seventy seconds, the leader was alerted to the fact that the worker had responded (the computer "beeped").

The subject was then free to examine the worker's response, which consisted of a numerical answer to the question and two comments from the worker. As indicated above, the subject could at this point easily compare the worker's numerical answers to the correct answers. Half of the leaders had a worker who performed well. This worker had correct responses to the first three trials but got the fourth trial wrong. The other half of the leaders had a poorly performing worker, who had incorrect responses to the first three trials and got the fourth trial right. All responses, correct and incorrect, are presented in Appendix C. The incorrect responses were definitely but not dramatically incorrect, and were put together after pretesting indicated that subjects found it hard to take seriously that anyone would get these tasks completely wrong. Therefore, incorrect responses had components which were correct and

components which were incorrect, whereas correct responses were completely correct.

Satisfaction Level Manipulation

The worker's comments were described to the subject as the worker's opportunity to communicate with the leader about any difficulties encountered or any comments at all that he/she might have. The comments section always contained two comments, and in fact the leader was told that the worker was required to submit two comments to the leader following each trial. Of the two comments, one was always particular to the subject's condition and the other was constant across conditions. All comments are shown in Appendix D. The first comment in each trial was specific to condition and as such served to both induce the satisfaction level manipulation and also to enhance the performance level manipulation. In other words, the first of the worker's comments following each trial indicated that s/he seemed to be enjoying or not enjoying the task and doing well or doing poorly at the task. The second comment in each trial was constant across conditions. Subjects could not respond in any way to these comments, but rather were told that the comments were simply for them to read for their information as leaders.

Dependent Measure Collection

At this point in each trial, subjects selected from among three incentives to offer the worker for the next trial, of which one was reward, one punishment, and the third "no sanctions". They did this by checking the space next to the word Reward, Punishment, or No Sanctions on a sheet of paper. However, the subject was asked to choose one of these incentives at the end of each trial and before the next with the knowledge that the worker would not see or in any way know about the incentive. In other words, this was not a "real" incentive, and

subjects understood that the measure was for research purposes only. The selection of incentives was specifically completed on paper, rather than on the computer, to ensure that subjects believed that no one (e.g., the fictional research assistant) would see the incentive choices during the experimental session. In other words, the subject was asked which incentive they would use if they could, but in fact they could not use any at all. They were simply asked to indicate one. The reason for this is twofold.

First, on the one hand, previous research has demonstrated that leaders with different styles or goals tend to use incentives differently (cf. Dustin & Davis, 1967, described earlier) and that furthermore, use of incentives may actually influence attributions made of subordinate performance (Rothbart, 1968). For this reason, it would appear that it is important to include an incentive measure in the present study. Second, on the other hand, nearly any incentive system which can be used in the context of the particular scenario described would put an obvious emphasis on high performance as a goal. For example, the obvious reward/punishment choices, which were in fact the ones used as examples to subjects, include the offering of a bonus if the next trial's answer is correct (reward), and taking away a bonus if it is incorrect (punishment). Since this emphasizes getting the answers correct, it is more strongly related to the high-performance leader goal than the satisfied-worker goal. Therefore, it was feared that if the leaders were actually giving the incentives to their workers, the mere fact of doing this might interfere with or somehow modify the intended leader goals. In particular, it might strengthen the high-performance goal manipulation and weaken the satisfied-worker goal manipulation. Having the leaders select incentives but with the awareness that the workers would not see

them allowed for measurement of this important variable while limiting any confounds it might introduce.

Following the selection of an incentive, the next trial began, again with the leader typing in his/her instructions for the worker for the next matrix's task requirements. When all four trials had been completed in the same manner as trial one, described above, the remaining dependent variables were collected. All of the measurement instruments are shown in Appendix E.

As a check on the leader goal manipulation, subjects were asked to describe the general type of leader goal which they were asked to use. They were then asked to rate the extent to which they feel they used each of the two leader goals. They were also asked to rate the importance they had attached to the worker's performance as well as the importance they had attached to the worker's expressions of satisfaction with the task. Finally, they were asked to rate the extent to which they believed they were successful and their supervision of the worker was effective. All ratings were made on a Likert-type scale which ranged from a low of zero (anchored with "To No Extent" or "Not At All Important", for example) to a high of nine (anchored with "To A Great Extent" or "Extremely Important", for example). All rating scales will be described in detail, where relevant, in the Results section.

Subjects next rated the worker's performance across trials on a zero to nine scale where zero indicated "Extremely Poor" and nine indicated "Extremely Good". They also rated the worker's competence at the task, and they rated how they thought the worker would do on a similar task in the future. These ratings were all made on similar scales and could then be averaged to yield a more reliable measure of performance evaluation than a single measure would provide. Similarly, subjects rated the extent to which they felt the worker

enjoyed the task, the likelihood that the worker personally benefited from the task, and the likelihood that the worker would agree to do this task again in the future. These ratings were made on zero-to-nine scales similar to those described above, and could similarly be averaged to obtain a measure of evaluation of the worker's satisfaction.

Following performance and satisfaction level ratings, subjects rated the extent to which they believed several factors influenced the worker's job performance. These factors included effort, task difficulty, time restriction, personality, work conditions/environment, ability, circumstances outside work, attitude, the subject's own leadership, and fit between the worker and the task. Attributions were rated on a zero to nine scale, where zero indicated that the factor being rated had no influence on the worker's performance and nine indicated that the factor greatly influenced performance.

Next, subjects were asked to write down in their own words their impressions of the subordinate, anything that came to mind and as much or little as they wanted.

As a measure of the types of information subjects would like to have about workers if they could, subjects were given a sheet of paper on which was listed twenty-one items. Each item represented a piece of information that the subject might want to have about the worker, but which had not been given or in any way implied in the experiment. Of the twenty-one items, seven were particularly important for a leader with a high-performance goal, based directly on the definition and descriptions of this type of goal used in this experiment. Examples are "the extent to which the task was clear to the worker" and "the worker's ability to follow orders". Another seven items were especially relevant to a leader with a satisfied-worker goal as described herein. Examples are "the

worker's need-for-affiliation" and "the extent to which the worker feels he/she used his/her potential". The final seven items were no more relevant to one type of leader goal than to the other and were essentially written to act as filler items. Examples are "the worker's gender" and "the worker's favorite food". The twenty-one items were arranged in a specific order such that two items of the same type were never listed in a row. Thus, the order of items was high-performance goal-relevant, irrelevant, satisfied-worker goal-relevant, and then repeating the order seven times, ending with a satisfied-worker goal-relevant item. Subjects were asked to choose the seven items about which they would most have liked to have had more detailed information in order to help them be a better leader. They were told that they could must choose seven and only seven items.

In order to measure recall of information from the task, subjects were asked, for each trial (1-4), what the matrix task and situation/problem was about (in their own words), whether the worker's response was right ("yes"/"no" or "cannot recall") , what comments the worker made, and what incentive was offered.

Finally, subjects were asked to provide some demographic and other information, such as their gender, major, and year in college. They were asked whether they had ever held a position of leadership, and, if so, to describe it briefly. Whether or not they had ever been in such a position, they were next asked which of the two leader goals they would consider a more "natural" one for themselves, and which they believe to be the better one, in general. (Note that with regard to demographic items, analyses indicated that although there were some effects of these variables, they were not central to the focus or outcome of the study. They are presented in Appendix F.)

The final question subjects were asked was to rate the extent to which they had been able to take the leader role seriously throughout the experiment. This rating was made on a zero to nine scale similar to those described above. Following this, subjects were debriefed and dismissed. As part of the debriefing, subjects were requested to refrain from discussing the experiment with any other potential subjects.

RESULTS

Manipulation Checks

Several manipulation checks of various kinds were included in the experiment. First, it was essential that subjects have an overall belief in the realism of the role they were asked to portray, that of a leader. For this reason, the last question subjects answered in the experimental session asked them to rate the extent to which they had been able to take the leader role seriously throughout the experiment. The scale ranged from "not at all" (0) to "extremely" (9). The mean for the 96 subjects was 7.0, with a standard deviation of 1.3. This indicates that subjects were able to take the role of a leader seriously.

Subjects were asked to employ a particular leader goal in interacting with their workers. Several questions were asked in order to check the effectiveness of the leader goal manipulations. Subjects were asked to rate the extent to which they used a leader goal of aiming for high performance from the worker (HP-goal) throughout the experiment, where 0 meant "to no extent" and 9 meant "to a great extent." As expected, a comparison of group means between groups with different manipulated leader goals revealed a significant difference (HP-goal M=6.4, SW-goal M= 5.7), $F(1,95)=6.57$, $p<.05$. Subjects were next asked to rate how important it had been to them, as they went through the trials, that the worker performed as well as possible. This time the scale

ranged from "not at all important" (0) to "extremely important" (9), and again the means between leader goal groups were significantly different and in the expected direction (HP-goal M=7.9, SW-goal M=7.2), F(1,95)=7.18, p<.01.

Next, subjects were asked to rate the extent to which they used a leader goal of aiming for satisfaction from the worker (SW-goal) throughout the experiment, using the same kind of scale described above. Again, the leader goal group means were significantly different and in the expected direction (HP-goal M=5.0, SW-goal M=7.1), F(1,95)=30.85, p<.001. Finally, subjects were asked to rate how important it had been to them, as they went through the trials, that the worker expressed satisfaction and enjoyment of the task. Again the means between leader goal groups were significantly different and in the expected direction (HP-goal M=5.3, SW-goal M=7.5), F(1,95)=28.76, p<.001. Thus, all four of the manipulation checks designed to measure effectiveness of the leader goal manipulation indicated that in fact the leader goal instructions were understood and, further, that subjects responded to them in the intended manner. In addition, subjects were asked to describe the leader goal they had been asked to use; every subject answered this question correctly.

Performance level of the worker was designed to be either high or low. The manipulation checks for the performance level manipulation were in the form of three questions which subjects answered. The first asked subjects to rate the worker's performance over all trials. They used a scale which ranged from "extremely poor" (0) to "extremely good" (9). A comparison between the means of groups who had been in the High Performance (HP) conditions and those who had been in the Low Performance (LP) conditions showed a significant difference in the expected direction in the performance rating (HP M=6.9, LP M=4.0), F(1,95)=133.77, p<.001.

The second question asked subjects to describe the worker's competence at this type of task, with the scale ranging from "extremely incompetent" (0) to "extremely competent" (9). Again, the means between performance level groups were significantly different and in the expected direction (HP $\underline{M}$=6.8, LP $\underline{M}$=3.2), $\underline{F}(1,95)=112.09$, $\underline{p}<.001$.

Finally, subjects were asked to rate how they thought their worker would do on another set of trials of this same type of task in the future. Ratings were made on a scale which ranged from "extremely poorly" (0) to "extremely well" (9), and performance level group mean differences were significant and in the expected direction (HP $\underline{M}$=7.3, LP $\underline{M}$=5.5), $\underline{F}(1,95)=30.66$, $\underline{p}<.001$. All three of the questions designed to assess effectiveness of the performance level manipulation indicated that the manipulation had its intended effect.

The worker's satisfaction level was designed to be either high or low, and subjects answered three questions to assess the impact of this manipulation. The first asked subjects to rate the extent to which they felt the worker enjoyed the task. The scale ranged from "to no extent" (0) to "to a great extent" (9). A comparison between the means of groups who had been in the High Satisfaction (HS) conditions and those who had been in the Low Satisfaction (LS) conditions showed a significant difference in the expected direction in the enjoyment rating (HS $\underline{M}$=6.2, LS $\underline{M}$=3.2), $\underline{F}(1,95)=106.58$, $\underline{p}<.001$.

The second question asked subjects to describe the likelihood that the worker personally learned something or otherwise benefited personally from doing the task, with the scale ranging from "not at all likely" (0) to "extremely likely" (9). Again, the means between satisfaction level groups were significantly different and in the expected direction (HS $\underline{M}$=5.4, LS $\underline{M}$=3.4), $\underline{F}(1,95)=28.65$, $\underline{p}<.001$.

Finally, subjects were asked to rate how likely they thought it was that the worker would say "yes" if asked to do this task again in the future. Ratings were made on a scale which ranged from "not at all likely" (0) to "extremely likely" (9), and satisfaction level group mean differences were significant and in the expected direction (HS $\underline{M}$=6.7, LS $\underline{M}$=3.9), $\underline{F}(1,95)=59.62$, $\underline{p}<.001$. All three of the questions designed to check on the satisfaction level manipulation indicated that the manipulation had its intended effect.

Dependent Variables

Measures will be discussed as they relate to three aspects of information processing: leaders' actions, inferences, and conclusions.

Actions Leaders Took Regarding Workers

Number of words in communications. Leaders gave written (typed) instructions to their workers for each of the four trials of the experimental task. Because these communications were typed on the computer and saved, it was possible to obtain an exact word and character count for each subject's communications over the four trials. Both word and character counts were examined to ensure that nothing unusual had occurred which would affect the analyses of a "quantity" of communications variable. All results were the same whether the dependent measure was number of words or number of characters, and therefore results will be discussed for the number of words only.

The major hypothesis regarding the quantity of communications was that SW-goal leaders would give more instructions and other communications than would HP-goal leaders. This was supported by the results, which showed a main effect of leader goal on number of words communicated from leader to worker. The mean for the SW-goal leaders was 411, whereas the mean for the HP-goal leaders was 333, a significant difference in the expected direction,

$F(1,95)=5.57$, $p<05$. Although no other specific hypotheses were made regarding quantity of communications, a main effect of performance level was also found such that leaders with a high performing worker used fewer words in communicating than did those with a low performing worker (HP $M=323$, LP $M=421$), $F(1,95)=8.64$, $p<.01$. Finally, there was a marginally significant three-way interaction of leader goal, performance level, and satisfaction level, $F(1,95)=3.73$, $p<.06$ for number of words. This interaction can aid in understanding the main effect of leader goal. The means and standard deviations for each of the eight conditions are presented in Table 1.

The three-way interaction can be explained by the fact that for the HP-goal leaders, there is a significant interaction between performance level and satisfaction level, $F(1,47)=4.69$, $p<.05$, whereas this interaction in not significant for the SW-goal leaders, $F(1,47)=0.54$, $p=.46$. Follow-up simple effects of the two-way interaction for HP-goal leaders indicated that when these leaders had a high-performing worker, they used more words in communicating to workers who expressed dissatisfaction than to those who expressed satisfaction (HS $M=231$, LS $M=335$), $F(1,23)=4.91$, $p<.05$. However, when HP-goal leaders had a low-performing worker, there was no effect of satisfaction level on quantity of words used, $F(1,23)=1.22$, $p=.28$. Another way to look at this interaction is that HP-goal leaders, when confronted with a worker who was highly satisfied, used more words when the worker performed poorly ($M=420$) than when the worker performed well ($M=231$), $F(1,23)=7.83$, $p<.05$. When these leaders had a worker who expressed dissatisfaction, there was no effect of performance, $F(1,23)=0.03$, $p=.85$.

On a broader level, simple effects analyses of the three-way interaction showed that there was a significant effect of leader goal for the subjects who

Table 1

Quantity of Instructions

Mean number of words
(s.d.)

		Leader Goal			
		HP		SW	
Performance Level:		High	Low	High	Low
Satisfaction Level:	High	231 (138)	420 (189)	352 (143)	410 (214)
	Low	335 (87)	344 (144)	375 (134)	508 (209)

had a worker who performed well and expressed satisfaction with the task (HP-goal M=231, SW-goal M=352), F(1,23)=4.41, p<.05. There was also a significant effect of leader goal for the subjects who had a worker who performed poorly and expressed dissatisfaction with the task (HP-goal M=344, SW-goal M=508), F(1,23)=5.00, p<.05. Thus, although, as indicated earlier, there was a main effect of leader goal such that SW-goal leaders used more words than did HP-goal leaders, on closer inspection this tendency of SW-goal leaders is apparent only in the two conditions detailed above.

Nature of communications. A more "qualitative" measure was obtained by content coding the communications for each subject. All coding was done by the experimenter, and the manner in which this was accomplished was as follows: The sheets of paper containing printed copies of each subject's communications to his/her worker were shuffled to ensure that they would not be coded in any particular order. The front of these sheets of paper contained only the communications, with no information or clue of any kind as to the condition in which each subject had been. The experimenter then scanned through the 96 sheets (one for each subject) to identify the categories for which it would be reasonable to code, after which a coding convention was determined. These coding conventions can be found in Appendix G. All coding was done in a lenient manner, such that precise wording was of less importance than getting a certain idea across. The experimenter coded a random sample of approximately ten percent of the subjects' communications twice, and agreement between the two rating times was 87%. Coding of approximately ten percent of the subjects' communications was also done by a second rater, and inter-rater agreement was 84%. These percentages were

calculated as the average percent agreement across all measures of communication and across all trials.

The first six coded variables were coded by counting the total number of times each occurred over all four trials. The first variable was counted as occurring any time the leader communicated to the worker that the latter should feel free to ask any questions or ask the leader for help. The second variable was counted as occurring any time the leader informed the worker that the latter's ideas, comments, or thoughts were welcome. The third variable was counted as occurring any time the leader told the worker to be careful and make sure the calculations were correct, to double-check the work, etc. The fourth variable was counted any time the leader in any way referred to any kind of incentive system to motivate the worker. The fifth variable was counted whenever a leader said thank you to the worker, or indicated that the work was appreciated. Finally, the sixth variable was counted any time the leader greeted the worker in any way at the start of a trial, as opposed to simply starting the task instructions. Table 2 presents descriptive statistics for each of these variables.

The results for these six variables are not surprising. Since there were few occurrences of any of the variables, there were also few effects. However, there was a significant main effect of leader goal on the second variable, welcoming the worker's ideas. SW-goal leaders expressed this more times (M=0.27) than did HP-goal leaders (M=0.04), $F(1, 95)=4.81$, $p<.05$. There was similarly a significant effect of leader goal on the fifth variable, the number of times the leader thanked the worker (HP-goal M=0.92, SW-goal M=1.60), $F(1,95)=4.58$, $p<.05$. The results also indicate a significant two-way interaction of leader goal and performance level for variable four, the number of times any mention is made of incentives, $F(1,95)=7.23$, $p<.01$. Follow-up simple effects

Table 2

Descriptive Statistics of First Six Coded Instruction Variables (across four trials)

Coded Variable	mean (sd)
1 ("feel free to ask for help")	0.3 (0.8)
2 ("your ideas are welcome")	0.2 (0.5)
3 ("check your accuracy")	1.3 (1.3)
4 (reference to incentives)	0.3 (0.6)
5 ("thanks for your work")	1.3 (1.6)
6 (greeting)	0.6 (1.3)

analysis shows that this interaction stems from the difference in number of times there is mention of incentives by HP-goal leaders with a low performing worker (M=0.75) compared with HP-goal leaders with a high performing worker (M=0), F(1,47)=18.82, p<.001, and compared with SW-goal leaders with a low performing worker (M=0.29), F(1,47)=5.40, p<.05. There was also a significant three-way interaction of leader goal, performance level, and satisfaction level on the third variable, number of times the leader tells the worker to make sure his/her answers are correct, F(1,95)=5.66, p<.05. The means and standard deviations for each of the eight conditions are presented in Table 3.

Simple effects analyses indicate that HP-goal leaders tell their workers to be accurate more when they have a low performing worker than when they have a high performing worker. This is true at both high satisfaction levels, (HP M=0.17, LP M=2.25), F(1,23)=57.77, p<.001, and at low satisfaction levels, (HP M=0.58, LP M=1.75), F(1,23)=9.37, p<.01. SW-goal leaders show this same effect, but only for workers with low satisfaction (HP M=0.67, LP M=2.42), F(1,23)=14.66, p<.001. Also, there was an effect of goal for those leaders who had a worker who performed well and expressed satisfaction. With these workers, SW-goal leaders mentioned accuracy more (M=1.00) than did HP-goal leaders (M=0.17), F(1,23)=4.66, p<.05.

Four other variables were coded from the communications to worker in a different manner. Instead of being coded as the total number of times a particular event occurred, the remaining variables were coded in terms of the extent to which they occurred in each of the four trials.

Variable seven measured the extent to which the leader included the worker in the task, incorporating a "we are working together" concept. This was coded on a one to three scale. One indicated that this "we" concept was not

Table 3

Number of Times Leader Tells Worker to be Accurate

		Leader Goal			
		HP		SW	
Performance Level:		High	Low	High	Low
	High	0.17	2.25	1.00	1.67
Satisfaction		(0.58)	(0.75)	(1.21)	(1.37)
Level:					
	Low	0.58	1.75	0.67	2.42
		(0.79)	(1.06)	(1.15)	(1.08)

included at all, but rather the leader instructed in a way that simply told the worker what s/he should do. A rating of two indicated that there was at least some of the "we" concept incorporated, and the worker was included in the process to a greater extent. Generally what this meant was that the instructions were communicated in a manner which indicated that the worker, by doing his/her part, would help the leader to accomplish his/her part. However, a rating of two indicated that the leader also made it clear that the worker's part was of less importance than the leader's part. A rating of three indicated that the leader did not differentiate specifically between the worker and leader, making it clear that "we have to accomplish this task together."

Again, this variable was coded separately for each trial. Data were analyzed with a repeated measures analysis of variance, such that each subject

had four ratings on variable seven (for the four trials), and the effects of leader goal, performance level, and satisfaction level were examined on this variable. (This is identical to creating a composite variable across the four trials and using a between-subjects ANOVA.) There was a significant effect of leader goal on this variable, $F(1,95)=9.22$, $p<.01$. Although no hypothesis had been made with regard to this variable, the means (over all trials) were in the direction which would be expected (HP-goal $M=1.61$, SW-goal $M=1.85$). This indicates that SW-goal leaders were more likely to incorporate a "we are working together" concept in their communications than were HP-goal leaders. There were no effects of either performance or satisfaction level.

Variable eight measured the level of detail which the leader gave about how to get the task done. This, too, ranged from a low of one to a high of three. A rating of one indicated that the leader gave the worker no detail at all about how to do the task, simply telling the worker what end result or outcome was needed but leaving it to the worker to figure out how to get there. A rating of two indicated that some detail was offered, but the worker still had some leeway in terms of how to do the task. A rating of three indicated that the leader spelled out every possible detail about how to do the task. This variable was coded for each trial. A repeated measures ANOVA showed a significant effect of performance level on variable eight, $F(1,95)=8.50$, $p<.01$. Again, no hypothesis related directly to this variable, but the means make sense, with leaders with a low performing worker giving more detail about how to do the task ($M=2.17$) than did those leaders with a high performing worker ($M=1.84$).

Variable nine is similar to variable eight in coding scheme, although it measured the level of detail which the leader gave about what the task was for, including information about the clients and/or investments relevant to the task.

Importantly, it was not necessary to give any of this kind of information in order to completely specify the worker's task; thus, any such background information offered was 'extra' information. As in variable eight, coding was on a one to three scale where a one indicated that no detail at all was offered, a two indicated that some detail was offered, but some was withheld, and a rating of three indicated that all or nearly all of the information the leader had about the task was communicated to the worker. Variable nine was coded separately for each trial. It had been hypothesized that SW-goal leaders would offer more detail about the situation than would HP-goal leaders, that leaders with a low performing worker would offer less information than those with a high performing worker, and that SW-goal leaders would offer more detail to a dissatisfied worker than to a satisfied worker. However, the repeated measures ANOVA indicated no effect on variable nine of leader goal, performance level, or satisfaction level.

Variable ten was designed to assess the extent to which the instructions and other communications were directive, or the extent to which they were orders as opposed to requests. The coding scheme again ranged from a low of one, indicating communications which were not at all directive (these were phrased more like requests, such as "could you please...?"), to a two, which were somewhat directive (these were generally phrased as "what I'd like you to do is..."), to a three, which were very directive (these were direct orders, such as "sum these numbers" or "get me these calculations quickly"). This variable was coded for each of the four trials. No specific hypothesis was made regarding this variable. A repeated measures ANOVA indicated a significant effect on variable ten of leader goal, such that HP-goal leaders were more directive ($\underline{M}$=2.25) than were SW-goal leaders ($\underline{M}$=1.71), $\underline{F}(1,95)=24.20$, $\underline{p}<.001$.

Analyses by trial indicated that this significant leader goal difference was present for each individual trial as well.

Finally, a new variable was created which was designed as a more global measure of a leader's sensitivity toward his/her worker, and of the leader's concern that the worker enjoy the task. These are obviously attributes which would be expected to be found to a greater extent in SW-goal leaders as opposed to HP-goal leaders. This measure of leader concern was a composite of three variables described above: Variable seven (the "we are working together" concept) for each of the four trials, variable nine (information given about what the task was for) for each trial, and variable ten (directiveness), which was reverse scored for each trial. Not surprisingly given results reported for each variable, a between subjects ANOVA showed that there was a main effect of leader goal on this measure of leader concern, $F(1,95)=17.40$, $p<.001$, such that SW-goal leaders showed a higher level of this variable ($M=2.1$) than did HP-goal leaders ($M=1.7$).

Incentives. Subjects selected an incentive for the worker following each of the four trials. Therefore, each subject selected four incentives. The number of times each incentive (reward, punishment, or no sanctions) was selected was analyzed. In terms of the descriptive statistics of the three incentive choices across subjects ($N=96$), the mean number of times reward was selected was 2.05. For selection of punishment, the mean was 0.59. The mean number of times no sanctions was chosen was 1.35.

Table 4 presents the descriptive statistics and significance tests for all three incentives by performance level. A main effect of performance level was hypothesized for use of punishment, and this effect was found, $F(1,95)=4.16$, $p<.05$, although it needs to be interpreted in light of a significant three-way

Table 4

Use of Incentives by Performance Level

	Performance Level			
	High	Low	F(1,95)	p<
Reward	2.4 (1.0)	1.7 (1.0)	10.92	.01
Punishment	0.5 (0.5)	0.7 (0.8)	4.16	.05
No Sanctions	1.1 (1.0)	1.6 (1.0)	4.40	.05

interaction for use of punishment of performance level, leader goal, and satisfaction level, $F(1,95)=4.16$, $p<.05$. This will be discussed below. There was a main effect of performance level found for use of reward, $F(1,95)=10.92$, $p<.01$, and no sanctions as well, $F(1,95)=4.40$, $p<.05$. These effects can essentially be seen as extensions of the performance level manipulation checks.

The means and standard deviations for the eight conditions of the three-way interaction for use of punishment are presented in Table 5. This can be explained by a significant two-way interaction between leader goal and satisfaction level for those leaders with a low-performing worker, $F(1,47)=4.67$, $p<.05$. For those leaders with a high-performing worker, this interaction is not

Table 5

Use of Punishment

Mean number of times punishment was selected
(s.d.)

		Leader Goal			
		HP		SW	
Performance Level:		High	Low	High	Low
	High	0.5	1.2	0.4	0.4
Satisfaction		(0.5)	(0.9)	(0.5)	(0.5)
Level:					
	Low	0.6	0.6	0.3	0.8
		(0.5)	(0.7)	(0.7)	(0.8)

significant, $F(1,47)=0.27$, $p=.61$. The two-way interaction for leaders with a poorly performing worker indicated that with a worker who performed poorly but expressed satisfaction with the task, HP-goal leaders were more likely to use punishment ($M=1.2$) than were SW-goal leaders ($M=0.4$), $F(1,23)=5.90$, $p<.05$. Simple effects analyses of the three-way interaction also showed that HP-goal leaders used punishment more with a low performing worker ($M=1.2$) than with a high performing worker ($M=0.5$) only when the low performing worker expressed satisfaction with the task, $F(1,23)=4.63$, $p<.05$. In fact, when the worker expressed dissatisfaction with the task, HP-goal leaders were no more likely to use punishment with a low performing worker than with a high

performing worker. In both of the latter cases, the mean number of times punishment was used was 0.6.

Overall, the condition which stands out in the interaction shown in Table 5 seems to be that of the HP-goal leaders with a poorly performing worker who expressed satisfaction (M=1.2). This seems sensible in that a low performing worker who nonetheless expresses job satisfaction could well be the one for which punishment seems most appropriate for a leader. Interestingly though, this was not the case for SW-goal leaders.

A three-way interaction for no sanctions is marginally significant ($p<.06$) and the means and standard deviations for the eight cells are shown in Table 6. Simple effect analyses show that SW-goal leaders used no sanctions for a low performer more than they did for a high performer when the worker also expressed satisfaction. There were no other differences. Finally, there were no effects for use of reward other than the main effect for performance level described above.

Information seeking. Subjects were given a list of twenty-one items of information which they might want to have about the worker, and they were asked to select the seven that they felt would be most useful to them as leaders. It was hypothesized that HP-goal leaders would seek more items which were HP-goal-relevant than would SW-goal leaders. Although the means were in the expected direction, this effect was not significant (HP-goal $M=4.1$, SW-goal $M=3.8$), $F(1,95)=2.31$, $p=.13$. It was similarly hypothesized that SW-goal leaders would seek more SW-goal-relevant information than would HP-goal leaders, and the results confirmed this hypothesis (HP-goal $M=2.4$, SW-goal $M=3.0$), $F(1,95)=5.41$, $p<.05$.

Table 6

Use of No Sanctions

		Leader Goal			
		HP		SW	
Performance Level:		High	Low	High	Low
	High	1.3	1.2	0.9	1.8
Satisfaction		(0.8)	(1.0)	(0.8)	(0.8)
Level:					
	Low	1.1	1.8	1.3	1.5
		(1.2)	(1.0)	(1.1)	(1.0)

The other hypotheses with regard to the information seeking measure were not supported. It was predicted that SW-goal leaders with a low performing worker would seek more HP-goal-relevant information and less SW-goal-relevant information than they would with a high performing worker. In terms of cell means, SW-goal leaders with a low performing worker sought a mean of 4.0 HP-goal relevant items and with a high performing worker, SW-goal leaders sought a mean of 3.7 HP-goal relevant items, $F(1,47)=0.82$, $p=.37$. In terms of seeking SW-relevant items, again there was no difference for SW-goal leaders with high and low performing workers. These leaders sought 2.9 SW-goal relevant items with a low performing worker and 3.0 SW-goal relevant items with a high performing worker, $F(1,47)=0.32$, $p=.57$.

Additionally, it was hypothesized that HP-goal leaders with a high performing but dissatisfied worker would seek more SW-goal-relevant information than would HP-goal leaders in any other condition. This would require a three-way interaction, which was not found, $F(1,95)=1.05$, $p=.31$.

Another way in which these data were analyzed examined each of the 21 items separately (rather than looking at the mean overall number of HP-goal-relevant & SW-goal-relevant items chosen). This analysis essentially views the 21 items as 21 dependent variables, as opposed to three (for the three different types of information), and then examines whether the frequency of item endorsement differed by leader goal, performance level, or satisfaction level. The effect of each of the independent variables on frequency of endorsement of each item was assessed with a chi-square test. Of the seven items which were defined as SW-goal-relevant, there was a significant difference between leader goal conditions in frequency of endorsement for one item. This was an item in which subjects indicated interest in gaining information regarding "the worker's

general level of happiness", and the observed frequency of endorsement was in the expected direction. That is, more SW-goal leaders than HP-goal leaders endorsed this item, X^2 (1, $\underline{N}$=96) = 4.36, $\underline{p}$<.05.

Of the seven items defined as HP-goal-relevant, there was a significant difference between leader goal conditions in frequency of endorsement for one item. With this item, subjects indicated interest in gaining information regarding "the worker's ability to follow orders", and the expected frequency of endorsement was in the expected direction. That is, more HP-goal leaders endorsed this item than did SW-goal leaders, X^2 (1, $\underline{N}$=96) = 4.00, $\underline{p}$<.05.

There were no significant differences between performance level conditions in terms of frequency of endorsement of any of the items. For satisfaction level, there was a significant difference in item endorsement for two items. For one of these items, the results must be interpreted with caution because there is an expected frequency of less than ten in one cell, which, according to the guidelines for sufficient sample size for a chi-square test, is problematic (e.g., McCall, 1980). The item in question is one in which subjects indicated interest in gaining information regarding the worker's age, and although few subjects endorsed this item, those with a dissatisfied worker did so more than those with a satisfied worker, X^2 (1, $\underline{N}$=96) = 4.91, $\underline{p}$<.05. The other item for which there is a significant difference is an item mentioned above as also showing a difference in endorsement frequency for leader goal groups. This is the item regarding ability to follow orders, and results indicated that subjects with a satisfied worker endorsed this item more than did subjects with a dissatisfied worker, X^2 (1, $\underline{N}$=96) = 5.98, $\underline{p}$<.05.

Inferences Leaders Drew Regarding Workers

Attributions. Table 7 presents means for each of the eight conditions for all attribution measures. All measures of attribution were made on a scale which ranged from 0 ("to no extent") to 9 ("to a great extent") on which subjects indicated the extent to which they believed that each of several factors influenced the worker's job performance. The factors were effort, personality, ability, attitude, job difficulty, time restriction placed on the worker, working conditions, circumstances outside work, and your own leadership.

Based on Kipnis' (e.g., 1987) theory of the "metamorphic effects of power" as well as Rothbart's (1968) research, described earlier, it was hypothesized that with a high performing worker, SW-goal leaders would attribute performance more to the worker's effort than would HP-goal leaders and that the latter would attribute low performance more to a lack of effort than would SW-goal leaders. The results, shown in Table 8, indicate a significant two-way interaction of leader goal and performance level for attribution to effort, $F(1,95)=5.70$, $p<.05$. Follow-up simple effects analysis shows that with a high performing worker, SW-goal workers attributed performance more to the worker's effort ($M=7.0$) than did HP-goal leaders ($M=5.6$), $F(1,47)=6.04$, $p<.05$. Simple effects analysis of this interaction also indicates that HP-goal leaders are significantly more likely to attribute low performance than high performance to effort (in this case, low effort); in other words, these leaders see effort as more

Table 7

Means: Attribution Measures

		Leader Goal			
		HP		SW	
Performance Level:		High	Low	High	Low
	effort:	5.9	6.3	7.1	5.8
	personality:	5.1	5.4	6.1	6.1
	ability:	5.9	7.3	6.9	7.8
High	attitude:	6.7	6.7	7.5	6.8
	job difficulty:	5.5	4.3	5.7	5.3
	time restraint:	4.8	4.5	5.8	4.6
	work conditions:	5.2	4.4	6.4	5.6
	circ.outside:	3.4	2.8	4.6	4.5
Satisfaction	own leadership:	6.8	5.9	6.8	6.6
Level:					
	effort:	5.3	7.4	6.8	7.3
	personality:	5.0	7.1	6.0	6.6
	ability:	6.5	6.4	5.4	5.4
Low	attitude:	5.6	7.7	7.5	6.8
	job difficulty:	4.5	4.1	5.0	3.4
	time restraint:	6.0	3.8	5.1	4.4
	work conditions:	4.2	5.3	5.7	3.8
	circ.outside:	2.9	2.9	3.3	3.5
	own leadership:	5.4	5.2	6.0	6.2

Table 8

Attributions of Performance to Effort and Attitude:

A Two-Way Interaction

		Leader Goal	
		HP	SW
Performance Level:	High	Effort: 5.6 Attitude: 6.3	Effort: 7.0 Attitude: 7.5
	Low	Effort: 6.9 Attitude: 7.2	Effort: 6.5 Attitude: 6.8

of a factor in explaining low performance (M=6.9) than high (M=5.6), $F(1,47)=5.82$, $p<05$.

There was a significant interaction of performance level and leader goal for attribution to attitude, which essentially mirrored the similar interaction for attribution to level of effort described above. The means for this interaction are presented in Table 8. The interaction indicates that with a high performing worker, SW-goal leaders attribute performance more to attitude (M=7.5) than do HP-goal leaders (M=6.3), $F(1,47)=7.87$, $p<.01$. With a low performing worker, leaders with different goals do not differ regarding attributions to attitude (HP-goal M=7.2, SW-goal M=6.8), $F(1,47)=0.57$, $p=.45$. Simple effects analyses also show that SW-goal leaders do not differ in their attributions to attitude

based on worker performance level (HP M=7.5, LP M=6.8), F(1,47)=2.72, p=.11, whereas HP-goal leaders are marginally significantly more likely to attribute low performance (M=7.2) than high performance (M=6.3) to worker attitude, F(1,47)=3.61, p<.07.

There was a main effect of leader goal for attributions of performance to circumstances outside work such that SW-goal leaders attributed performance more to circumstances outside work than did HP-goal leaders (HP-goal M=3.0, SW-goal M=4.0), F(1,95)=5.13, p<.05.

There was a significant two-way interaction between leader goal and satisfaction level for attributions of performance to ability. Follow-up simple effects analyses show that with a satisfied worker, SW-goal leaders attribute performance significantly more to ability (M=7.3) than they do with a dissatisfied worker (M=5.4), F(1,47)=10.39, p<.01. For HP-goal leaders, attribution to ability was not influenced by the worker's satisfaction level (HS M=6.6, LS M=6.5), F(1,47)=0.08, p=.78.

It was also predicted that SW-goal leaders would tend to attribute poor performance more to a lack of ability than would HP-goal leaders, but the interaction between goal and performance was not significant with regard to attributions to ability, F(1,95)=0.09, p=.76. In terms of cell means, for HP-goal leaders the mean attribution to ability for a low performing worker was 6.9, whereas for SW-goal leaders it was 6.6.

Other hypotheses regarding attributions of performance dealt with the performance level manipulation. It was predicted that leaders with high performing workers would attribute performance more to their own leadership than would leaders with low performing workers. This would be a self-serving attribution for the leaders. Although this was not found to be the case (HP

M=6.3, LP M=6.2), F(1,95)=0.04, p=.85, a similar idea can be seen in the results for the satisfaction level manipulation. That is, leaders with a satisfied worker were more likely to attribute the worker's performance to their own leadership (M=6.5) then were leaders with a dissatisfied worker (M=5.9), although the effect was marginal, F(1,95)=3.42, p=.07.

It was additionally hypothesized that leaders with low performing workers would attribute performance more to task difficulty than would leaders with high performing workers. Although the direction of the means violated the prediction, the effect was non significant (HP M=5.2, LP M=4.3), F(1,95)=2.93, p=.09.

Finally, it was predicted that when a worker performed poorly and expressed dissatisfaction, leaders would attribute performance more to the worker's attitude toward the task than they would in any other condition. Although this was true in terms of cell means, the interaction between performance level and satisfaction level was non significant, F(1,95)=2.07, p=.15. In terms of cell means, with a poor performer who was dissatisfied, the mean attribution to attitude was 7.2. With a poor performer who was satisfied, the mean was 6.8. With a high performer, the means for a dissatisfied and satisfied worker were, respectively, 6.5 and 7.1.

Several significant and interesting effects of attribution measures emerged which were not hypothesized. Some of these effects have already been described above, and the remainder will be described next.

There was a main effect of performance level for attributions of performance to the time restriction placed on the worker. Contrary to what would be assumed, leaders with high performing workers attributed performance more to the time restriction than did leaders with low performing workers (HP M=5.4, LP M=4.3), F(1,95)=5.13, p<.05.

There was a significant two-way interaction of performance level and satisfaction level for attributions of performance to effort, $F(1,95)=5.70$, $p<.05$. Simple effects indicate that when leaders had a high performing worker, attributions of performance to effort had little to do with the worker's expressed satisfaction level (HS $M=6.5$, LS $M=6.1$), $F(1,47)=0.53$, $p=.47$. However, when leaders had a low performing worker, attributions of performance to effort (in this case, low effort) were higher if the worker expressed dissatisfaction ($M=7.3$) than if the worker expressed satisfaction ($M=6.0$), $F(1,47)=8.20$, $p<.01$. Thus, it appears that when a worker performed poorly and also seemed unhappy with the task, leaders attributed the poor performance largely to a lack of effort. This precise effect was hypothesized in terms of attribution to attitude toward the task, which may translate into effort for these subjects (or any subjects).

Impressions. Subjects were asked to write a free-form impression of the worker after all trials had ended. This was an exploratory measure and no particular hypotheses had been made in its regard. It was necessary to content code this data in order to analyze it. Coding was done by the experimenter and, again, all coding was done blind to subject's condition. Coding categories were determined by reading through the impressions of all subjects and identifying categories which seemed to be mentioned by several subjects. Sixteen categories were originally identified, of which seven had sufficient sample size (i.e., number of subjects who referred in any way to that category) to be analyzed. These were impressions regarding: The worker's competence, attitude, effort, job satisfaction, boredom/enthusiasm, perceptions regarding his/her own role (as worker), and care taken in the task. Each of these variables was coded with a one to three scale, and the specific scales for each are included with the coding conventions presented in Appendix H. As with coding

of subjects' communications to their workers, a random sample of approximately ten percent of the subjects' impressions was coded twice by the experimenter. Agreement between the two times was 88%. Also, another rater coded a sample of approximately ten percent of the subjects' impressions, and inter-rater agreement was 81%. These percentages were calculated as the average percent agreement across all impressions and across all subjects coded.

Across most variables, a one represented a low rating; for example, this indicated that the subject said something about a worker's low performance or competence, poor attitude, low effort, etc. A two was used to indicate that the subject said something about the worker's moderate level of competence, attitude, effort, etc., and a three indicated impressions of good or high levels of competence, attitude, effort, etc. For the impression regarding the leader's perception of how the worker feels about his/her own role, a one indicated an impression that the worker was content in the worker role, a two that the worker was moderately content in that role but with some reservations, and a three that the worker was not content in the worker role.

Results indicated a significant effect of performance level on stated impressions of the worker's competence (HP M=2.27, LP M=1.45), $F(1,69)=21.49$, $p<.001$. This is essentially an extension of the manipulation check on the performance level manipulation. There was also an effect of satisfaction level on impressions of the worker's satisfaction with the task (HS M=2.65, LS M=1.00), $F(1,47)=121.72$, $p<.001$, which is another check on the satisfaction level manipulation. Similarly, there was an effect of satisfaction level on impressions of worker attitude (HS M=2.88, LS M=1.29), $F(1,29)=35.28$, $p<.001$. A main effect of leader goal was found on impressions

of effort or motivation of the worker, in which SW-goal leaders perceived that their worker had a higher effort level (M=2.43) than did HP-goal leaders (M=1.58), $F(1,25)=6.77$, $p<.05$. Another effect of satisfaction level was found on impressions of the worker's boredom or enthusiasm level, in which, not surprisingly, leaders with a less satisfied worker were more likely to feel that the worker was bored (M=1.00), and leaders with a more satisfied worker were more likely to describe the worker as enthusiastic (M=2.33), $F(1,29)=23.00$, $p<.001$. Again, not surprisingly, for the variable which was coded to measure impressions of how the worker seemed to feel about his/her own role, there was an effect of satisfaction level in which leaders with a satisfied worker felt that the worker was more content in the worker role (M=2.08) than did those with a dissatisfied worker (M=2.65), $F(1,72)=6.64$, $p<.05$. (Note that, as described above, for this variable a rating of one meant that the worker seemed content, and a rating of three implied discontent.) The one other variable with sufficient sample size, impressions of the worker's carelessness/diligence, was not affected by leader goal, performance level, or satisfaction level.

Recall. Subjects were asked to recall four types of information from each of the four trials. The first was information about the specific task or basic situation and scenario around which each trial revolved. Next, subjects were asked whether their worker had given the correct answer to each trial, after which they were asked to recall the two comments the worker had made following each trial. Finally, subjects were asked to recall which of the three incentives they had selected following each trial. All questions were asked for trial one, then trial two, trial three, and, lastly, trial four (as opposed to asking each type of recall question for all trials, followed by the next type of question for each trial, and so on). Hypotheses were made regarding recall of each of the

four types of information. However, with regard to recall of whether the worker had given the correct answers or not, and which incentives had been selected, hypotheses were the same. In both cases it was predicted that HP-goal leaders would have better recall, based primarily on the fact that these types of information are performance-relevant. The possibility was raised that there would be a ceiling effect for one or both of these measures, eliminating any effects, and this is what occurred. Because the task consisted of only four trials, virtually all subjects were able to correctly recall worker performance information as well as which incentives had been selected. Therefore, no further results for recall of these two information types will be discussed. Results regarding recall of information regarding the task and the worker's comments will be described next.

Recall of both trial and comment information was content coded in the same way. Coding was done by the experimenter and, as described in the section above on coding of communications to worker, care was taken to ensure that the experimenter was blind to condition during coding. For both types of information, two separate variables were coded. The first variable assessed the extent to which recall was accurate, and results regarding this variable will be discussed before the second variable is described. Accuracy was coded with a one to three rating scale, in which one represented that the information recalled was completely incorrect or it was left blank. By leaving the item blank, a subject indicated that s/he could not recall anything about the task or comments, and this was considered equally incorrect as when a subject put down a response but was entirely incorrect. A rating of two was used for responses which had some elements of accuracy, but were missing large amounts of detail. These responses indicated that the subject had some vague

memory for the task or comments. A rating of three was used for responses which were substantially correct, and these responses were missing little, if any, substantive detail.

For accuracy of information about the trials, no particular hypothesis had been made. Analyses examined the effects of leader goal, performance level, and satisfaction level for recall of information about each trial and a composite of all trial information (a mean of all four trials). There were no effects on the composite variable. There were also no effects on recall of information for trials one, three, and four. For trial two, there was a significant effect of leader goal (HP-goal $\underline{M}$=2.29, SW-goal $\underline{M}$=1.90), $\underline{F}(1,95)=4.84$, $\underline{p}<.05$.

Regarding accuracy of recall of the comments the worker had made, it was hypothesized that SW-goal leaders would have better recall than would HP-goal leaders. Because the comments are not necessary to get the task done, it was predicted that HP-goal leaders would not pay as much attention to them as would SW-goal leaders. There were eight worker comments made (two following each of the four trials), and the effects of leader goal, performance level, and satisfaction level on accuracy of recall was examined for each of the eight comments, and then on composites of the two comments following each trial. Additionally, a composite was created which was the mean of recall of all eight comments. There was a marginally significant effect of performance level on this composite, $\underline{F}(1,95)=3.58$, $\underline{p}=.06$. Means indicated that leaders with a low performing worker had better recall for worker comments ($\underline{M}$=1.9) than did those with a high performing worker ($\underline{M}$=1.8).

In terms of individual comments, the significant effects were as follows: There was an effect of leader goal on recall of the first comment of the fourth trial, and it was in the expected direction (HP-goal $\underline{M}$=1.63, SW-goal $\underline{M}$=2.08),

$F(1,95)=6.05$, $p<.05$. There were no other effects by leader goal. There was an effect of performance level on recall of the first comment of the first trial, such that leaders with a low performing worker recalled this comment better ($M=2.60$) than did those with a high performing worker ($M=2.19$), $F(1,95)=5.49$, $p<.05$. There was also an effect of performance level on the composite for trial one (this is the mean of the first and second comment) (HP $M=1.98$, LP $M=2.28$), $F(1,95)=6.34$, $p<.05$.

As mentioned above, there were two variables coded for recall of trial and comment information, the first regarding accuracy of the information recalled. The second variable assessed the emphasis of the information recalled. That is, if a subject recalled information which was sufficiently correct to have earned a rating of either two or three as described for the accuracy rating scale, then this information generally tended to emphasize either satisfied-worker leader goal relevant information or high-performance leader goal relevant information. In the case of SW-goal emphasis, for trial recall, the type of information recalled was only or predominantly information which would make the task more interesting or challenging to the worker, although it was not essential to completing the task. For recall of comment information, this tended to be information which was relevant to how the worker felt or how s/he perceived the task. In the case of HP-goal emphasis, for trial information there was a tendency to recall information directly relevant to the calculations necessary for completing the task. For recall of comment information, this was demonstrated as recall of information the worker gave regarding ways to improve his/her performance in the task, rather than how s/he felt about the task. Table 9 presents examples of trial information and comment information which would be coded as emphasizing each of the leader goal types.

Table 9

Example Recall Statements

Trial Information	Coded as Emphasizing
"Compared the sum of column 1 to the sum of column 8"	High-performance goal
"Compared a widow's cautious investment strategy to a young person's more risk-taking strategy"	Satisfied-worker goal
Comment Information	
"I am not good at math"	High-performance goal
"I don't like math"	Satisfied-worker goal

It is important to note that in the examples provided, each of the statements recalled are equally accurate. That is, for the trial information, both statements correctly describe the situation from trial one. However, although both of these statements are correct, they differ in their emphasis. In the comment information examples, the complete correct statement would be, "I guess math has always been something I have trouble with, maybe partly because I don't like it." Again, both statements are equally accurate, but they differ in their emphasis. Note that these are examples selected to make a point, not actual statements from subject's recall.

In coding recall for emphasis, there were statements for which a coding could not be made as having one or the other emphasis. These were

statements which equally emphasized both leader goals or which were completely incorrect or left blank. However, coding was done for all four trials, and all eight comments, and then summarized on a per subject basis. For the trial information, a subject's trial emphasis was taken to be the emphasis shown more often across the four trials. For example, if a subject showed a high-performance goal emphasis on three trials and a satisfied-worker goal emphasis on one, that subject's overall trial emphasis was coded as high-performance goal. If a subject had an equal number of the two goal types as emphasis, that subject was coded as missing for trial emphasis. The rationale for this method of coding is that it is more reliable to analyze a subject's overall emphasis, rather than on a per trial basis, because there may have been something about certain trials which lent themselves more easily to, or encouraged, one emphasis or the other. Coding subjects with equal emphasis as missing, then, makes sense because that subject truly did not show either emphasis in their overall recall of trial information. Across all 96 subjects, only ten were coded as missing trial recall emphasis. Recall of comment information was coded in the same way, across the eight comments. Across the 96 subjects, 25 were coded as missing comment recall emphasis.

Data from the emphasis of recall were analyzed with a chi-square test to examine differences in emphasis for subjects with different leader goals. For trial information, there was no significant difference in emphasis by leader goal, X^2 (1, $\underline{N}$=86) = 0.88, $\underline{p}$>.05. Similarly, for comment information, there was no significant effect of leader goal, X^2 (1, $\underline{N}$=71) = 1.06, $\underline{p}$>.05.

Conclusions Leaders Reached Regarding Workers

Ratings of worker satisfaction. In the case of all three satisfaction rating questions, SW-goal leaders rated workers as being more satisfied than did HP-goal leaders. The means and standard deviations for each of these questions and the composite, by leader goal, are presented in Table 10.

There was also a significant effect of performance level on ratings of satisfaction, which showed that leaders with a high performing worker rated the worker as being more satisfied than did leaders with a low performing worker. There was a main effect of performance level found for the first rating of worker satisfaction (HP M=5.4, LP M=4.0), $F(1,95)=21.78$, $p<.001$. There was also a marginally significant effect of performance level for the third rating of satisfaction (HP M-=5.7, LP M=4.9), $F(1,95)=3.89$, $p<.06$. Finally, there was a significant performance level main effect for the composite satisfaction rating (HP M=5.1, LP M=4.5), $F(1,95)=5.07$, $p<.05$.

Ratings of worker performance. Recall that there were several different questions asked to assess leader evaluation of worker performance. One question asked subjects to describe the worker's competence at this type of task, with the scale ranging from "extremely incompetent" (0) to "extremely competent" (9). For this question, there was a main effect of goal (HP-goal M=4.65, SW-goal M=5.38), $F(1,95)=4.59$, $p<.05$. This indicates that for ratings of competence, SW-goal leaders rated the competence of all workers less strictly than did HP-goal leaders, regardless of whether workers' performance levels were low or high.

Subjects also were asked to rate the worker's performance over all trials. They used a scale which ranged from "extremely poor" (0) to "extremely good" (9). There was a main effect of performance level, described above in the

Table 10

Ratings of Worker Satisfaction by Leader Goal

	Goal: HP	SW	F(1,95)	p<
Satisfaction Rating Question	mean (sd)	mean (sd)		
1	4.2 (2.4)	5.3 (2.0)	13.52	.001
2	3.7 (2.0)	5.1 (2.2)	14.61	.001
3	4.9 (2.4)	5.7 (2.2)	4.83	.05
Mean of 1, 2, and 3	4.3 (2.0)	5.4 (2.0)	14.57	.001

section on manipulation checks, (HP M=6.9, LP M=4.0), $F(1,95)=133.77$, $p<.001$. There was also a significant three-way interaction of leader goal, performance level, and satisfaction level, $F(1,95)=7.19$, $p<.01$. The means and standard deviations for each of the eight conditions are presented in Table 11.

The three-way interaction is clarified by a two-way interaction of performance level and satisfaction level for SW-goal leaders, $F(1,47)=7.25$, $p<.01$. Although there is a main effect of performance level for all leaders, the performance level by satisfaction level interaction is not significant for HP-goal leaders, $F(1,47)=1.48$, $p=.23$. Follow-up simple effects analyses of the two-way

interaction for SW-goal leaders showed that these leaders rated performance higher for a low-performance worker who expressed dissatisfaction (M=4.9) than for a low-performance worker who expressed satisfaction (M=3.6), F(1,23)=6.94, p<.05, whereas HP-goal leaders appear to have been less influenced by the worker's satisfaction level when rating the worker's performance. Analyses also showed that SW-goal leaders rated low performance less strictly than HP-goal leaders, but only when the worker also expressed dissatisfaction (HP-goal M=3.6, SW-goal M=4.9), F(1,23)=5.89, p<.05.

Table 11

Ratings of Worker Performance

		Leader Goal			
		HP		SW	
Performance Level:		High	Low	High	Low
	High	6.6	4.1	7.3	3.6
Satisfaction Level:		(1.5)	(1.3)	(0.8)	(1.2)
	Low	7.0	3.6	6.8	4.9
		(1.0)	(1.4)	(1.2)	(1.3)

DISCUSSION

Each of the hypotheses will be restated, followed by a brief description of the support or lack of support which was obtained for each. The first hypothesis stated that SW-goal leaders would communicate more, quantitatively, to workers than would HP-goal leaders. This was supported, although closer examination indicated that this difference was significant only in two conditions: with a worker who performed well and expressed satisfaction with the task, and with a worker who performed poorly and expressed dissatisfaction with the task. The other hypothesis with regard to leader communications was that SW-goal leaders would offer workers more detail about the client and task situation than would HP-goal leaders, that leaders with a low performing worker would offer less information than those with a high performing worker, and that SW-goal leaders would offer more detail to a dissatisfied worker than to a satisfied worker. However, these results were not supported.

The next set of hypotheses revolved around the incentive measures. A main effect of performance level was hypothesized for use of punishment, and this effect was found. A main effect of leader goal on use of punishment was also hypothesized, such that HP-goal leaders would use punishment more than would SW-goal leaders. A three-way interaction for use of punishment indicated that there was a significant two-way interaction between leader goal and satisfaction level for leaders with a poorly performing worker. This finding indicated that with a worker who performed poorly but expressed satisfaction with the task, HP-goal leaders were more likely to use punishment than were SW-goal leaders.

In terms of information seeking, it was hypothesized that HP-goal leaders would seek more items which were HP-goal relevant than would SW-goal

leaders. This was not supported. Similarly, it was hypothesized that SW-goal leaders would seek more items which were SW-goal relevant than would HP-goal leaders. This hypothesis was supported. The other hypotheses with regard to the information seeking measure were not supported. It was predicted that SW-goal leaders with a low performing worker would seek more HP-goal-relevant information and less SW-goal-relevant information than they would with a high performing worker. Additionally, it was hypothesized that HP-goal leaders with a high performing but dissatisfied worker would seek more SW-goal-relevant information than would HP-goal leaders in any other condition.

There were several hypotheses regarding the attribution measures. It was hypothesized that with a high performing worker, SW-goal leaders would attribute performance more to the worker's effort than would HP-goal leaders and that the latter would attribute low performance more to a lack of effort than would SW-goal leaders. This hypothesis was supported. It was also predicted that SW-goal leaders would tend to attribute poor performance more to a lack of ability than would HP-goal leaders, but this was not supported. The remaining hypotheses regarding attributions of performance dealt with the performance level manipulation and were not supported. It was predicted that leaders with high performing workers would attribute performance more to their own leadership than would leaders with low performing workers. It was additionally hypothesized that leaders with low performing workers would attribute performance more to task difficulty than would leaders with high performing workers. Finally, it was predicted that when a worker performed poorly and expressed dissatisfaction, leaders would attribute performance more to the worker's attitude toward the task than they would in any other condition. Although this was true in terms of cell means, the effect was non significant.

The next set of hypotheses described predictions for the recall measures. With regard to recall of whether the worker had given the correct answers or not, and which incentives had been selected, hypotheses were the same. In both cases it was predicted that HP-goal leaders would have better recall. However, there was a ceiling effect for both of these measures, eliminating any effects. Regarding accuracy of recall of the comments the worker had made, it was hypothesized that SW-goal leaders would have better recall than would HP-goal leaders. This was supported for one of the eight comments. Finally, it was hypothesized that when asked to recall task information, SW-goal leaders would tend to recall needs of clients and HP-goal leaders would tend to recall specific tasks. This was not supported.

It was hypothesized that satisfied workers would be rated as more satisfied than dissatisfied workers, and this was supported. Similarly, high performing workers were rated as performing better than low performing workers. It was also hypothesized that HP-goal leaders would rate low performance more severely than SW-goal leaders. Results indicated that SW-goal leaders did rate low performance less strictly than HP-goal leaders, but only when the worker also expressed dissatisfaction.

It is important to note that this experiment was to a great extent exploratory in nature, with little directly relevant previous research to guide hypotheses. Therefore, many of the most interesting and important findings were not predicted and/or regard variables for which no hypotheses were given. A brief profile of the apparent effect of each leader goal will be offered next.

The effect of approaching a worker and task with a SW-goal is apparent at the start of the experimental session with these leaders quantitatively communicating more to workers. SW-goal leaders use more words than HP-

goal leaders in instructions and communications overall, but SW-goal leaders have a particular tendency to use more words for two types of workers: Those who perform well and express satisfaction, and those who perform poorly and express dissatisfaction. This can be explained by the fact that with the former type of worker, the leader is trying to maintain the worker's interest and good performance. With the latter type of worker, the effort is to try to increase the worker's interest and performance. Additionally, SW-goal leaders are more likely than HP-goal leaders, in their communications, to indicate that they welcome the worker's ideas and input into the task, and they are also more likely to thank the worker and tell the worker that his/her effort is appreciated. These leaders also include the worker more in the process of doing the task, such that their instructions and other communications are phrased in a way which tends to blur the distinction between leader and subordinate. Finally, SW-goal leaders are less directive than HP-goal leaders in their communications to workers; they tend to phrase instructions in the form of a request as opposed to an order or a demand. Interestingly, this effect is seen for each of the four trials, including the first trial. Consider that at this point in the task, no feedback at all has come from the worker. Any communication in trial one must be based on only the leader goal. Therefore, it is important to note that leader goal alone seems to have an effect on the directiveness of instructions. This is important because of its implications for the metamorphic effects of power model, which can aid in understanding other effects found in this study. This will be discussed shortly.

The effect of approaching the worker and task with a HP-goal also begins at the start of the experimental session with these leaders communicating quantitatively less with workers. HP-goal leaders use fewer words than SW-

goal leaders in instructions and communications overall, but again this tendency to use fewer words is particularly noticeable for two types of workers: Those who perform well and express satisfaction, and those who perform poorly and express dissatisfaction. This can be explained by the fact that with the former type of worker, the leader is getting exactly what he/she wants, good performance and no complaints. With the latter type of worker, the effort is to try to improve the worker's performance. With both of these workers, it makes sense that this type of leader would keep communications as simple and to the point as possible. HP-goal leaders also communicate more with a high-performing worker who is dissatisfied than with a high-performing worker who is satisfied, suggesting that with a worker who is performing well, concern about the worker's interest in the task might increase for this leader. Finally, HP-goal leaders communicate more to a worker who is performing poorly but is satisfied than to a worker who is performing well and is satisfied. This is in an effort to improve performance of the former worker.

In terms of type of communications used (qualitatively), HP-goal leaders with a low-performance worker are more likely than SW-goal leaders with a low-performance worker to mention incentives to motivate the worker. HP-goal leaders with a low-performance worker also mention incentives more often than these leaders do with a high-performance worker. Additionally, these leaders tell low-performance workers more than high-performance workers to be accurate and careful in calculating answers. HP-goal leaders also tend to differentiate between their own tasks and those of the worker, tending to make clear that the worker's task is of less importance to the overall process. Finally, HP-goal leaders are more directive than SW-goal leaders in their instructions to workers; they tend to phrase instructions in the form of a direct order or a

demand rather than a request. As described earlier, this effect is seen for each of the four trials, including the first trial.

SW-goal leaders rate workers as more satisfied than do HP-goal leaders, and SW-goal leaders do this regardless of worker satisfaction level. This seems to indicate that SW-goal leaders may be responding with selective interpretation. In accordance with this aspect of dissonance theory, it may be the case that the SW goal acts as a schema for these leaders, and they then interpret worker responses in a way which is consistent with their schema, which includes having satisfied workers. It does not seem to be the case that these leaders are simply paying more attention to satisfaction-relevant information. If this were true, then SW-goal leaders would rate satisfied workers as more satisfied than would HP-goal leaders (which they do), but then would rate dissatisfied workers as less satisfied than do HP-goal leaders (which they do not). SW-goal leaders may or may not be paying more attention to satisfaction-relevant information, but they certainly appear to interpret the information in a way which keeps their schema or goal intact. An important implication of this explanation is that a leader who is "determined" to have satisfied workers might fail to notice or be fully aware of even blatant worker dissatisfaction. Similarly, a leader with a HP-goal might actually be more likely than a leader with an SW-goal to perceive dissatisfaction from a worker.

SW-goal leaders generally rate worker performance more leniently than do HP-goal leaders. One question asked leaders to rate worker competence, and for this question SW-goal leaders rated worker competence more leniently than HP-goal leaders regardless of performance level, whereas HP-goal leaders rated worker competence more strictly than SW-goal leaders regardless of performance level. For the more straightforward performance

rating, which was a simple rating of overall performance, SW-goal leaders specifically rated the performance of one type of worker more leniently. This is the worker whose performance level was low and who also expressed dissatisfaction with the task. SW-goal leaders rated this worker's performance more leniently than did HP-goal leaders. However, SW-goal leaders also rated this worker's performance more leniently than they themselves rated the same low performing worker who expressed satisfaction. This indicates that the satisfaction level in some way led SW-goal leaders to rate this low performer more leniently. One possible explanation for this comes from the results for attributions of performance. SW-goal leaders rated circumstances outside work as influencing performance significantly more than did HP-goal leaders. This indicates that SW-goal leaders were more likely to take into account possible difficult situations in the worker's life which might affect performance, and this may have led them to more leniently rate performance in general and in particular for a worker who performed poorly and seemed dissatisfied or unhappy.

Similarly, the tendency of HP-goal leaders to rate performance and competence lower may stem from the tendency of HP-goal leaders to attribute poor performance to (lack of) worker effort. Knowlton and Mitchell (1980) demonstrated that supervisors rate (satisfactory) performance more highly if they attribute it to worker effort. HP-goal leaders were found here to attribute poor performance more to effort than they did good performance. Apparently, when confronted with a poorly performing worker, HP-goal leaders attribute performance to a lack of effort and thus rate performance lower. When confronted with a high-performance worker, HP-goal leaders attribute performance less to effort than they do with a low-performance worker, and less

to effort than SW-goal leaders do with a high-performance worker. This, too, can account for lower performance ratings.

The metamorphic effects of power model is very helpful in explicating the attribution results. For example, as indicated above, HP-goal leaders were more directive in instructions to workers, also tending to phrase instructions as orders, and placing emphasis on incentives and the importance of accuracy. In terms of the metamorphic model, HP-goal leaders can be said to have used stronger influence tactics than SW-goal leaders. The model predicts that when leaders use stronger means of influence, they will then be less likely to attribute good performance to the worker's own motivation and effort. Consistent with this prediction, HP-goal leaders attributed high performance significantly less to worker effort than did SW-goal leaders. Similarly, in subjects' free-form written impressions of workers, HP-goal leaders perceived workers to have a lower effort and motivation level than did SW-goal leaders.

Other attributional differences between leader goal groups follow the predictions of the metamorphic effects of power model, and can therefore be explained by this model quite well. For example, as indicated above, SW-goal leaders were less directive in instructions to workers, also tending to phrase instructions as requests, thanking the worker and asking for his/her input. SW-goal leaders also showed more general concern or sensitivity toward workers in their communications. In terms of the metamorphic model, SW-goal leaders can be said to have used weaker means of influence rather than stronger tactics. The model predicts that when leaders use weaker means of influence, they will then be more likely to attribute good performance to the worker's own motivation and effort. Consistent with this prediction, SW-goal leaders attributed high performance significantly more to worker effort than did HP-goal

leaders. Similarly, in subjects' free-form written impressions of workers, SW-goal leaders perceived workers to have a higher effort and motivation level than did HP-goal leaders.

The final variable for which interesting results emerged is the use of punishment as an incentive. SW-goal leaders were found to use punishment less than HP-goal leaders with a worker who performed poorly but expressed satisfaction. There are at least two ways to explain this. One way is by simply thinking about the goals of these different leaders. HP-goal leaders were focused on having a high performing worker. To have a worker consistently perform poorly would therefore be frustrating. But to have a worker who not only performed poorly but expressed a great deal of satisfaction about the task and performance would be infuriating. This would be far less of a concern for SW-goal leaders, whose major goal is to have a satisfied worker.

Another explanation for this finding comes from the attribution literature. For example, Mitchell and Wood (1980) and Wood and Mitchell (1981) found that supervisors were generally more punitive when they attributed poor performance to internal causes rather than external causes. The results of the present study indicated that HP-goal leaders were significantly more likely to attribute low performance than high performance to (low) worker effort. SW-goal leaders did not show this effect. Similarly, HP-goal leaders were marginally significantly more likely to attribute low performance than high performance to (bad) worker attitude, whereas SW-goal leaders did not show this effect. The effect described above, in which SW-goal leaders were more likely to attribute performance to circumstances outside work than were HP-goal leaders, is also relevant in that it would make SW-goal leaders less likely to use punishment. Therefore, because HP-goal leaders seem more likely to attribute

poor performance to internal worker causes, and SW-goal leaders tend to attribute performance more to at least one external cause, it is not surprising that HP-goal leaders use punishment more for a low performance-high satisfaction worker.

CONCLUSIONS

In this experiment, two distinct leadership styles were described, each was operationalized by the type of goal or mindset such a leader might hold, and the information processing effects of each leader goal were examined. As described in the introduction, there are many research examples which demonstrate that people process information in any given situation in a manner which is consistent with the particular goals they have or the particular mindset with which they are operating. The results of this experiment indicate that the leadership style with which a leader approaches his/her work and his/her subordinates can have a significant impact on the leader's judgments and perceptions regarding subordinates. Like accuracy goals and communication goals, different leader goals seem to encourage differences in the manner in which information is processed. Importantly, this study suggests that the effects of leadership style will in some cases be independent of a subordinate's level of performance and level of satisfaction and will in other cases interact with performance and/or satisfaction level. These results have obvious implications for the many kinds of leader and managerial decisions and judgments, from selection decisions to performance appraisal decisions.

In fact, this suggestion fits in well with recent models of the performance appraisal process (e.g., Feldman, 1981) which focus on the appraiser's information-processing system. As discussed earlier, such models point out that a rater's schema is a critical determinant of the manner in which the

appraisal proceeds, and schemas can systematically bias the rater's evaluation of information. The present study provides some evidence for the prediction these models make; for example, if leadership style is viewed as a schema, or as an important determinant of the schema a leader uses, then this experiment has demonstrated the information-processing implications of such a schema. Particularly relevant to the performance appraisal process are the results for performance ratings.

Although there were few significant results for the recall measures, it is instructive to note that in a somewhat similar study, the comparison of tutoring styles by Aronson and Jones (1992) (described earlier), there were also no differences in recall. They explained the differences between tutoring styles on measures of attribution of performance by discussing the possibility of tutors' differential focus of information. A follow-up experiment to the present one might include a more complicated task with more trials so that a recall measure would be more meaningful.

The results of this study provide evidence for, and can in part be explained by, Kipnis' theory of the metamorphic effects of power (e.g., 1976). For example, HP-goal leaders were found to be more directive than SW-goal leaders in their instructions and other communications to workers, and the former were then found to attribute high performance less to the worker's own effort than did the latter. This fits in well with the theory, which predicts that when a leader is more directive (i.e., uses stronger influence tactics), the leader then gives the worker less credit for having performed well of his/her own accord.

There are some limitations to this study. It is a well-controlled laboratory study and therefore in many ways lacks the complexities of a real

leadership/subordinate interaction. It is important that future research continue to look at the processes involved in leadership in controlled laboratory settings, but also that this type of research be extended to field settings. In this experiment, students were in the role of leaders and the interaction between leaders and workers was lacking in the dynamics of a face-to-face meeting. (On the other hand, communication using only a computer may have implications for issues in computer-supported cooperative work, which is becoming more common.) Lack of face-to-face interaction also allowed for control of confounds such as gender, race, age, and other demographic characteristics, as well as variations in performance and satisfaction level and other behaviors. But on the other hand, this study was unable to examine the reciprocity that exists in real-life interactions, in which each person influences the other.

One potentially problematic issue is the effect of the directions or instructions given to subjects. It might be argued that subjects were told what to do, and then they did it, a not very interesting result. While this might in part explain results for some of the dependent measures, it cannot explain others. It is possible, and only future research can clarify this, that some of the measures of leader communication to workers can be explained by this (such as welcoming of worker's ideas, mentioning of incentives); however, other measures cannot (such as directiveness of communication and number of words used). The only other measure which is potentially tainted by these demand characteristics is the use of incentives. However, it does not seem possible that the manner in which instructions were given to subjects could in any way account for subjects' differential attibutions of performance, ratings of performance, or ratings of satisfaction. Therefore, this concern, while valid,

does not appear to hinder the ability of this study to lead to meaningful and important conclusions regarding most of the dependent measures examined.

Another concern regarding the instructions given to subjects involves the wording of the instructions for SW-goal leaders. These leaders were told that "if each individual employee is proud of the work they do and happy with their working conditions and enjoy the work, successful business will be the logical end result." At issue is the fact that this potentially clouds the goal for SW-goal leaders, perhaps giving them a dual goal: successful business, which could be interpreted as high performing workers, but at the same time, the goal of satisfied workers. This is as opposed to HP-goal leaders, who clearly had only one goal: high performing workers. The question then is twofold: first, did SW-goal leader instructions actually lead to such a dual goal?, and second, if they did, what might be the effect of this on results of the study? One answer to the first question comes from looking at the manipulation checks. Both questions which were asked of subjects to measure their interest in the worker's high performance in the task indicated that HP-goal leaders were significantly more interested in task performance than were SW-goal leaders. Assuming however, for the sake of argument, that SW-goal leaders were given essentially two goals, this would have meant that these leaders had a more complex task. Although this is possible, there is no evidence that it occurred. One place where this might have come out is in the results for recall. If SW-goal leaders were tying to cope with a more complex task, this may have been indicated with recall of less information, or less accuracy of information recalled. These results were not found to be the case.

Both concerns regarding instructions to leaders are important ones, and they should be taken into consideration in any future research of this nature.

One way to eliminate such concerns introduces another important point: A limitation as well as a strength of this experiment is that leadership style was manipulated rather than measured. This is realistic to the extent that organizations impose mandates on management, such as "empower your employees." There is research which suggests that even something as broad as such a mandate or a company policy can influence supervisors' attitudes toward employees (Stanton, 1960). Certainly an important follow-up to this experiment would be to examine similar dependent measures with real managers whose leadership goals or styles have been measured. By measuring rather than manipulating leader goals, the issues described above regarding wording of instructions to leaders would also be taken care of.

Other issues which should be studied further in the future include closer examination of the effects of leadership style on some of the variables studied here. For example, the results for selection of incentives were interesting, but the measure was not as realistic as might be desired. Likewise, number of words used in communications is important mainly in terms of what it indicates about the way a leader treats a worker and the information the leader feel it important to give the worker. In general, the measures in this study and their results together seem to paint a picture of each type of leader goal and the tendencies it might encourage.

Future research should continue to broaden our understanding of the leadership process by examining the effects of leadership style on the leader's decision making processes studied here as well as other processes in other contexts. For example, it would be interesting to examine the effects of leadership style on a leader's decision-making regarding issues other than subordinates (such as tendency toward risky decisions). This experiment,

along with a very few others (as indicated earlier, these are Aronson and Jones, 1992, and the studies by Kipnis and his colleagues) has begun to open up a new perspective for research. This involves an often neglected subject of psychological inquiry, the agent of influence. Further examination of the effect of leadership style on leaders' perceptions of workers, the effect of teaching style on teachers' perceptions of students, the effect of parenting style on parents' perceptions of children, and many other aspects of the influencing role all seem to offer a new and exciting way of increasing our understanding of some basic processes.

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APPENDIX A

Instructions to Subjects

(Instructions for satisfied-worker leaders)

Researchers studying the topic of leadership have described two different leader goals which they say leaders use in supervising employees. These can be referred to as a "satisfied-worker goal" and a "high-performance goal". As the names suggest, the first (the satisfied-worker goal) involves a focus on relationships and workers' needs so that the workers will be satisfied in their jobs. The second (the high-performance goal) involves making sure that workers perform as well as possible. In this experiment, we are specifically and only interested in studying the first type of leader goal, the **satisfied-worker goal**.

Because I am interested in studying a leader goal, the ideal situation would be to actually have you lead a worker through a task, having a real interaction with the worker. But for several reasons, that is not possible for this experiment. Therefore, I will explain what we will do instead. You are asked to take the role of a leader, and you are going to go through a task with a worker. You will conduct the entire task using the computer, as if you are interacting with a worker. In reality, there is no worker. As you go through the task, you will tell this worker what to do for each of four trials, and each time, the worker will try to do what you said, and you will receive responses and comments from the worker. As I said, there is not really a worker, but let me tell you what is really going on. I ran a large population of pretest subjects, including Rice students, HS students, & students from UH through the worker's task, and from this I got a large pool of responses to each trial of the task, plus a pool of comments a worker might make during the task.

Your computer is hooked up to a computer down the hall, and my research assistant will be selecting responses and comments from this pool of possible options and the ones chosen will be sent to you on the computer as if they are from your worker. The answers chosen to be sent to you will be based in part on the task instructions you give for each trial. In other words, what you do is important because answers will be chosen which are appropriate to respond to what you do. For the remainder of the experiment, whenever I say "worker", understand that this does not mean a person who is here now, but that I am asking you to try to go through the experiment as much as possible as if you were really interacting with a worker. Also, please try to assume you are interacting with a single worker throughout the experiment, because answers are put together in patterns that are similar to what a single pretest subject might have done. Getting back to what I said earlier, we are specifically interested in examining the satisfied-worker goal, and so I need you to try as hard as you can to think in terms of that goal and use

that goal and type of leadership as you supervise the worker throughout the experiment. I will explain exactly what you will be doing and what this leader goal really means.

The task in which you will be the supervisor involves financial analysis. And please keep in mind that, as I said, you are trying to be a particular type of leader, a leader whose major goal is to make sure the worker is satisfied. I will next explain the basic beliefs and underlying principles on which this type of leader goal is grounded. These have to do with the way employees are treated, from a janitor all the way up to a top executive. The basic belief is that the single most important thing for each supervisor to do is to make sure that his/her employees enjoy their work and feel that they are making an important contribution. The idea is that if each individual employee is proud of the work they do and happy with their working conditions and enjoy the work, successful business will be the logical end result. I will now explain what this means in terms of specific types of leadership behaviors.

A leader with a goal to have satisfied workers should always focus on making sure that at the end of each workday or work session, each employee feels like they have enjoyed the day and the work, accomplished personal growth, they do not feel stressed, and they feel that they can easily and openly communicate any concerns or ideas to their supervisor and be heard and taken seriously. A supervisor's major concerns therefore lie in such things as group maintenance, keeping their employees happy, interaction and affiliation with employees, mutual trust between themselves and their employees, opening channels of communication, delegating to give employees a chance to use their potential, and conflict resolution.

(Instructions for high-performance leaders)

Researchers studying the topic of leadership have described two different leader goals which they say leaders use in supervising employees. These can be referred to as a "high-performance goal" and a "satisfied-worker goal". As the names suggest, the first (the high-performance goal) involves a focus on the work itself and making sure that workers perform as well as possible. The second (the satisfied-worker goal) involves making sure that workers are satisfied in their jobs. In this experiment, we are specifically and only interested in studying the first type of leader goal, the **high-performance goal**.

Because I am interested in studying a leader goal, the ideal situation would be to actually have you lead a worker through a task, having a real interaction with the worker. But for several reasons, that is not possible for this experiment. Therefore, I will explain what we will do instead. You are asked to take the role of a leader, and you are going to go through a task with a worker. You will conduct the entire task using the computer, as if you are interacting with a worker. In reality, there is no worker. As you go through the task, you will tell this worker what to do for each of four trials, and each time, the worker will try to do what you said, and you will receive responses and comments from the worker. As I said, there is not really a worker, but let me tell you what is really going on. I ran a large population of pretest subjects, including Rice students, HS students, & students from UH through the worker's task, and from this I got a large pool of responses to each trial of the task, plus a pool of comments a worker might make during the task.

Your computer is hooked up to a computer down the hall, and my research assistant will be selecting responses and comments from this pool of possible options and the ones chosen will be sent to you on the computer as if they are from your worker. The answers chosen to be sent to you will be based in part on the task instructions you give for each trial. In other words, what you do is important because answers will be chosen which are appropriate to respond to what you do. For the remainder of the experiment, whenever I say "worker", understand that this does not mean a person who is here now, but that I am asking you to try to go through the experiment as much as possible as if you were really interacting with a worker. Also, please try to assume you are interacting with a single worker throughout the experiment, because answers are put together in patterns that are similar to what a single pretest subject might have done. Getting back to what I said earlier, we are specifically interested in examining the high-performance goal, and so I need you to try as hard as you can to think in terms of that goal and

use that goal and type of leadership as you supervise the worker throughout the experiment. I will explain exactly what you will be doing and what this leader goal really means.

The task in which you will be the supervisor involves financial analysis. And please keep in mind that, as I said, you are trying to be a particular type of leader, a leader whose major goal is to get and maintain high performance from the worker. I will next explain the basic beliefs and underlying principles on which this type of leader goal is grounded. These have to do with the way tasks are accomplished, from a janitor's tasks all the way up to a top executive's tasks. The basic belief is that the single most important thing for each supervisor to do is to make sure that his/her employees are extremely clear at all times about their roles and their tasks and, in particular, the way the tasks need to be done to achieve the production the company requires. The idea is that if each individual employee is clear about the work they do and how to do it, successful business will be the logical end result. I will now explain what this means in terms of specific types of leadership behaviors.

A leader with a goal to have high performing workers should always focus on making sure that at the end of each workday or work session, production goals have been achieved and employees never feel at all confused about their roles, their goals, and their incentives to achieve them. A supervisor's major concerns therefore lie in such things as production, achievement, goals and setting goals, allocating labor, enforcing sanctions, defining roles, explaining what to do, establishing well-defined patterns of organization and channels of communication, work facilitation, motivation to achieve goals, and determining ways to accomplish assignments.

For all subjects: Task instructions:

- You will be leading the worker through a financial analysis task. There are 4 independent trials. Go through the trials in the order in which you see them in the notebook.
- Each trial will start out with a matrix. You will look at the matrix, read about the situation it describes and the task that needs to be done, and figure out exactly what you therefore need the worker to do. Please imagine that the way the task is set up, the worker has the exact same matrix that you have, with the rows, columns, and numbers in the matrix, but does not have any specific information about the clients and investments or about what the specific task is. Only you, the leader, have all of this information. It is noted on each matrix what information you can assume that the worker does and does not have so that you can be sure of this each time. While you are reading about the matrix, you can take notes if you want to or need to. Also, nothing that you are doing has any time constraints, so take as much time as you need at every step.
- Once you have read about the matrix and the task and you understand what needs to be done, you then need to communicate the task requirement to the worker, using the computer. (show how) In these task instructions, write whatever you want and always keep in mind your particular goal. After you send the instructions, there will be a space of time, as if the worker were doing the task. For each trial, just to give you an idea, the tasks involve calculations, and it would be the worker's job to do the actual calculations, not yours. This is because, again, we're looking at leadership, and as a leader, you wouldn't have the time to do these calculations. Assume that the worker has a calculator and other materials he/she would need. As the leader, your job is more one of strategy, that is figuring out from each matrix what needs to be done, and also, of course, leading, that is giving the worker the task to do, and then getting the response back at the end of each trial. You will also have some other things to do as the leader, which I will explain. One thing to keep in mind is that although it is entirely up to you to decide how to instruct the worker on what to do, each matrix is pretty specific about what the exact task is to be done. In other words, please try to stick to what is noted as the task to be done. This is because I need all of the subjects to be working with the same exact tasks.
- After you communicate to the worker what you need done, like I said there will be a lag time so that we can select appropriate responses and comments from your worker. During this time, you can start reading about the next matrix and thinking about the instructions you might want to communicate to the worker for that trial. You will know when the worker's task is done because the responses will be sent to you on the computer and the computer will beep to alert you that a response has arrived. So when you hear the beep, stop whatever you are doing and look at the computer screen. You will see the worker's answer to the previous trial, and two comments from the worker. Assume that the worker has certain restrictions and instructions, too, because the subjects who were pretested to get the responses and comments we're using did have some particular restrictions. One is that they are given a time restriction for each trial which makes the task somewhat more difficult. Also, assume that the worker is required to send you two comments with the answers to each problem. These comments may be about how the task went, any concerns of the worker, or just

any comments at all. The comments will be short, and you will read them to yourself. You will not respond, they are simply for your information. As for the worker's answers, you will want to check to see how they compare to the correct answers. This will be easy for you to do because I have already gone through each of the matrix trials and the tasks, and the correct answer for each trial is right on the sheet with the task. (show example) All you have to do lift the paper and check the correct answers. Again, this is just information for you as a leader. You will not correct the answers if they are wrong and you will not discuss any wrong answers with the worker on the next trial. Simply go on to the next thing, which is that you will select an incentive to motivate the worker to do well on the next trial. You don't need to memorize any of this, because the computer will always indicate to you what step comes next. After you see the worker's responses and comments for any given trial, you will click on button on the screen that says "OK". You will then see a reminder to select an incentive before going on to the next trial.

- The way this will work is that at the end of each trial, just before starting the next one, you will select one of the following options:
    - Reward
    - Punishment
    - No sanctions

The way you will make a choice is that all three will be shown, at the end of each trial, on a sheet of paper which I will give you, and you will simply check whichever you choose (show example). Again, this is a role-play, so I am asking you to select the one incentive that you feel you would use if you could after each trial. As for what these incentives mean, they can mean different things. For example, a typical "reward" would be that if a worker gets a correct answer, they are given a bonus, say $10. A typical "punishment" might be if they get it wrong, $10 is taken away from them. "No sanctions" simply means no particular incentive is being used either way. You can choose the same incentive each time, or a different one each time, or any combination. It will be your decision as the leader to make this choice the way you believe would be best.

- These are the basic instructions you need to do the task. You will go through the trials as I have described, and the computer will tell you when you are done.
- Two key things are please try to imagine that you are really leading a worker through this task and try to act as you really would in that situation, and remember that we are particularly interested in studying one type of leader goal, so try to keep that goal in mind as you go through the task. (reminder slip)

APPENDIX B

Matricies for Each Trial

1. Clients:	1	2	3	4	5	6	7	8
Investments:								
A	-22	-12	-18	-35		-54	-24	
B		244	165	132	112		112	398
C	256			198	122	200	56	
D	94	24	53	62	16	48	33	62
E		-88	-22		-48	-20		-146

Note: worker has no information below this line:

Situation: Client #1 is an elderly widow and is unwilling to invest in anything risky. Rather, she looks for consistency and stability over time. On the other hand, Client #8 is fairly young and without any dependents, and has expressed a willingness to invest even where risk exists. These two clients represent the extremes of different types of investment strategy. The numbers in the matrix indicate the amount of money each client made (or lost in the case of negative numbers) in the past year for each investment. Blank cells mean that that client does not invest in that particular investment.

Task: You are putting together a report on how these two investment strategies differ (risk versus no risk) and as part of the report you need to include comparisons of clients such as #1 and #8 above. You need the worker to give you sums for the relevant clients' columns as well as a calculation of the difference between them.

Correct answer: Column 1 sum=328, Column 8 sum=314
Difference between the sums=14

2. Year: 1 2 3 4 5

Investments:

A	48	52	63	50	35
B	112	114	100	78	94
C	200	118	-12		
D	50	46	35	47	52
E	70	60	75	82	90
F	25	18	64	-22	36

NOTE: in this case, it is the same client over a 5-year period.

Note: worker has no information below this line:

Situation: This matrix shows one client's profits or losses over a period of five years. Each column's numbers represent the amount of money gained or lost at the end of that year.

Task: You are now preparing to advise the client on reinvestment for the sixth year, and so you need to have information on the overall earnings from each investment over the five year period (with the exception of the investment in row C, which was dropped 2 years ago due to its poor performance). You need the worker to calculate the summed earnings, over the five years, for each investment (except C), subtracting where the numbers are negative.

Correct answer: Sum for A=248
Sum for B=498
Sum for D=230
Sum for E=377
Sum for F=121

3. Clients:

Investments:	1	2	3	4	5	6	7	8
A	200		125	100	52		80	80
B					112	92	87	120
C					46	50	24	56
D	-14	-12	-18	-10		-25		-30
E	27	45	38	50	35	24	50	45

Note: worker has no information below this line:

Situation: Clients 1, 2, 3, and 4 have been particularly interested, over the past year (the time frame shown by this matrix) in investing only in companies with a proven track record in using environmentally sound technologies. Clients 5, 6, 7, and 8 have never expressed any interest in the environment and have in fact invested in some organizations which, according to the media, may be using certain technologies which are harmful to the environment. The numbers in the matrix indicate the amount of money each client made or lost on each investment over the past year.

Task: In the coming years, it is expected that more and more clients will be interested in environmentally safe investments, and so you want to do a comparison of these 2 different client groups' earnings. You need the worker to sum each column, and then give you the average for each of the two relevant client groups.

Correct answer:

Sum for column 1=213
Sum for column 2=33
Sum for column 3=145
Sum for column 4=140
Average for 1,2,3,4=132.75

Sum for column 5=245
Sum for column 6=141
Sum for column 7=241
Sum for column 8=271
Average for 5,6,7,8=224.5

4.

Year:	1	2	3	4	5	6	7	8	(NOTE: same client over an 8-year period)
Investments:									
A	10	10	10	18	18	20	26	26	
B	5	4	8	8	10	10	12	10	
C	8	10	10	12	20	24	24	30	
D	10	10	10	8	8	10	6	6	
E	12	14	10	10	8	6	6	8	
F	8	6	10	10	12	10	6	4	

Note: worker has no information below this line:

Situation: This matrix shows one client's profits/losses over an eight-year period. The client has invested, among other things, in six different toy and game companies, labeled A through F. A, B, and C are computer game companies, whereas D, E, and F are traditional toy and game companies (e.g., stuffed animals, board games). The client now wants to see how these different types of investments have fared over the eight years.

Task: You need the worker to sum across each row, A through F, and then give you the average sums for each of the two relevant investment groupings.

Correct answer:

Sum of row A=138
Sum of row B=67
Sum of row C=138
Average of A,B,C=114.33

Sum of row D=68
Sum of row E=74
Sum of row F=66
Average of D,E,F=69.33

APPENDIX C

Performance Level Manipulation

	Correct Responses	Incorrect Responses
Trial 1	Column 1 sum=328 Column 8 sum=314 Difference between the sums=14	Column 1 sum=314 Column 8 sum=302 Difference between the sums=12
Trial 2	Sum for A=248 Sum for B=498 Sum for D=230 Sum for E=377 Sum for F=121	Sum for A=226 Sum for B=498 Sum for D=220 Sum for E=357 Sum for F=121
Trial 3	Sum for column 1=213 Sum for column 2=33 Sum for column 3=145 Sum for column 4=140 Average for 1,2,3,4=132.75 Sum for column 5=245 Sum for column 6=141 Sum for column 7=241 Sum for column 8=271 Average for 5,6,7,8=224.5	Sum for column 1=212 Sum for column 2=33 Sum for column 3=143 Sum for column 4=140 Average for 1,2,3,4=125 Sum for column 5=245 Sum for column 6=141 Sum for column 7=240 Sum for column 8=281 Average for 5,6,7,8=221
Trial 4	Sum of row A=138 Sum of row B=67 Sum of row C=138 Average of A,B,C=114.33 Sum of row D=68 Sum of row E=74 Sum of row F=66 Average of D,E,F=69.33	Sum of row A=138 Sum of row B=77 Sum of row C=138 Average of A,B,C=84.33 Sum of row D=68 Sum of row E=70 Sum of row F=66 Average of D,E,F=65

APPENDIX D

Satisfaction Level Manipulation

Condition 1: Satisfied with the task, Good performance on the task

First comment for Trial 1: I guess math has always been something I do pretty well at and like.

First comment for Trial 2: I like it that the task is so structured because it makes it easy to get the answers.

First comment for Trial 3: This is a fairly low-stress nonpressured task, especially since I think that I'm doing a pretty good job.

First comment for Trial 4: It's good that you decide what needs to be done and I do the calculations because it's easier to concentrate on just one thing.

Condition 2: Not satisfied with the task, Good performance on the task

First comment for Trial 1: I guess math has always been something I do pretty well at but for some reason I've never liked it.

First comment for Trial 2: The task is so structured that it makes it easy to get the answers but also kind of boring.

First comment for Trial 3: This is a fairly stressful pressured task, even though I think I'm doing a pretty good job.

First comment for Trial 4: I don't think it works well that you decide what needs to be done and I do the calculations because it's better to be able to do more than just one thing.

Condition 3: Satisfied with the task, Poor performance on the task

First comment for Trial 1: I guess math has always been something I have trouble with but I've always liked it anyway.

First comment for Trial 2: I like it that the task is so structured, but maybe it's confusing me because I'm having trouble getting the answers.

First comment for Trial 3: This is a fairly low-stress nonpressured task, even though I don't think I'm doing that well at it.

First comment for Trial 4: It's good that you decide what needs to be done and I do the calculations because it's easier to concentrate on just one thing, if I could just get it straight.

Condition 4: Not satisfied with the task, Poor performance on the task

First comment for Trial 1: I guess math has always been something I have trouble with, maybe partly because I don't like it.

First comment for Trial 2: The task is so structured. I think that it's confusing in terms of getting the answers and also kind of boring.

First comment for Trial 3: This is a fairly stressful pressured task, especially since I don't think that I'm doing that well at it.

First comment for Trial 4: I don't think it works well that you decide what needs to be done and I do the calculations because it's better to be able to do more than just one thing.

Constants (these are the second comments from all workers, regardless of subject's condition):

Trial 1: With these calculations it seems strange to think that they're really just a bunch of numbers, but to someone else they can make a big difference I guess.

Trial 2: One thing that helps me on any task is having specific goals like what percentage should be done correctly and how fast.

Trial 3: I think it's more interesting to work on a task with a pretty good idea of why the work is important or what it all means.

Trial 4: It's always helpful to have a really clear understanding of what the best way is to do a task, if there is one best way.

APPENDIX E

Dependent Measures

In general, what type of leader goal were you asked to use in approaching the worker and task in this experiment? (Describe below in your own words or in whatever words you remember from what you were told.)

To what extent do you feel that you used a leader goal of aiming for high performance from the worker throughout the experiment?

0	1	2	3	4	5	6	7	8	9
To No Extent									To A Great Extent

To what extent do you feel that you used a leader goal of aiming for satisfaction for the worker throughout the experiment?

0	1	2	3	4	5	6	7	8	9
To No Extent									To A Great Extent

If you would like to make any comments as to why you feel that you used either, both, or neither goal(s), or why not, please write them in the space below: (Continue on back if necessary.)

As you went through the trials, how important was it to you that the worker perform the task as well as possible?

0	1	2	3	4	5	6	7	8	9
Not At All Important									Extremely Important

As you went through the trials, how important was it to you that the worker expressed satisfaction and enjoyment of the task?

0	1	2	3	4	5	6	7	8	9
Not At All Important									Extremely Important

To what extent do you feel that you were a successful leader, that your supervision of the worker was effective? (Note: this question is not asking about the worker's performance, but rather how effective you believe **your** leadership was.)

0	1	2	3	4	5	6	7	8	9
To No Extent									To A Great Extent

If you have any comments as to why or why not, please write them in the space below: (Continue on back if necessary.)

Please answer the following questions by circling a number on the scale below each question. Take your time and think about each answer, and if you have any questions, ask the experimenter.

Which number on the scale below do you feel best describes the worker's performance over all trials?

0 1 2 3 4 5 6 7 8 9
Extremely Poor — Extremely Good

To what extent do you feel the worker enjoyed the task?

0 1 2 3 4 5 6 7 8 9
To No Extent — To A Great Extent

How would you describe the worker's competence at this type of task?

0 1 2 3 4 5 6 7 8 9
Extremely Incompetent — Extremely Competent

How would you describe the likelihood that the worker personally learned something or otherwise benefitted personally from doing this task?

0 1 2 3 4 5 6 7 8 9
Not At All Likely — Extremely Likely

If the worker were to do another set of trials at this same task in the future, how do you think he/she would do?

0 1 2 3 4 5 6 7 8 9
Extremely Poorly — Extremely Well

How likely do you think it is that the worker would say "yes" if asked to do this task again in the future?

0 1 2 3 4 5 6 7 8 9
Not At All Likely — Extremely Likely

The following questions ask you to rate **to what extent** certain factors **influenced** the worker's job performance. Do **not** rate whether a certain factor influenced performance negatively or positively. Rather, rate the **extent to which** it influenced performance regardless of whether it helped or hindered performance.

The rating scale you will use ranges from 0 to 9 with higher numbers indicating greater influence on job performance than lower numbers. For example, suppose that the worker had just recovered from a serious accident and that you were asked to rate to what extent this influenced job performance. If you believed that it influenced job performance greatly, you would give "health of worker" a high rating for influence on job performance. If you believed it had very little influence on job performance, you would give "health of worker" a low rating for influence on job performance.

Please indicate your answer to each question by circling your rating on the scale provided below each question. Please read each question carefully.

Level Of Effort

To what extent do you think that the level of effort the worker put forth influenced job performance?

0 1 2 3 4 5 6 7 8 9

To No Extent To A Great Extent

Difficulty Of The Task

To what extent do you think that the difficulty of the worker's task influenced the worker's job performance?

0 1 2 3 4 5 6 7 8 9

To No Extent To A Great Extent

Time Restriction

To what extent do you think that the time restriction put on the worker influenced the worker's job performance?

0 1 2 3 4 5 6 7 8 9

To No Extent To A Great Extent

Personality

To what extent do you think that the worker's personality influenced job performance?

0 1 2 3 4 5 6 7 8 9

To No Extent To A Great Extent

Work Conditions/Environment

To what extent do you think that the specific work conditions/environment influenced the worker's job performance?

0 1 2 3 4 5 6 7 8 9

To No Extent To A Great Extent

Level Of Ability
To what extent do you think that the worker's level of ability for the task influenced job performance?

0 1 2 3 4 5 6 7 8 9
To No Extent To A Great Extent

Circumstances Outside Work
To what extent do you think that the worker's circumstances outside work influenced job performance?

0 1 2 3 4 5 6 7 8 9
To No Extent To A Great Extent

Attitude Toward The Task
To what extent do you think that the worker's attitude toward the job influenced job performance?

0 1 2 3 4 5 6 7 8 9
To No Extent To A Great Extent

Your Leadership
To what extent do you think that your leadership of the worker influenced the worker's job performance?

0 1 2 3 4 5 6 7 8 9
To No Extent To A Great Extent

Level Of Fit Between Worker And Task
To what extent do you think that the level of fit between the worker and the job influenced job performance?

0 1 2 3 4 5 6 7 8 9
To No Extent To A Great Extent

Is there any other factor(s) which you think influenced the worker's job performance? If so, please specify in the space provided and rate the extent to which you think it influenced job performance.

Other (please specify: _____)

0 1 2 3 4 5 6 7 8 9
To No Extent To A Great Extent

Please write down in your own words your impression of the worker. Write anything that seems relevant, and write as much as you need to adequately express your impression.

What was trial 1 about? (write anything you remember about the basic situation and task required for trial 1.)

In trial 1, did the worker's answer seem to be correct? (please check one)

yes ____ no ____ cannot recall ____

The worker made two comments at the end of Trial 1. Please write down any of the comments that you remember the worker making at the end of trial 1. Do not worry about exact wording.

At the end of trial 1, before trial 2, what incentive did you choose?

Reward ____ Punishment ____ No Sanction ____

What was trial 2 about? (write anything you remember about the basic situation and task required for trial 2.)

In trial 2, did the worker's answer seem to be correct? (please check one)

yes ____ no ____ cannot recall ____

The worker made two comments at the end of Trial 2. Please write down any of the comments that you remember the worker making at the end of trial 2. Do not worry about exact wording.

At the end of trial 2, before trial 3, what incentive did you choose?

Reward ____ Punishment ____ No Sanction ____

What was trial 3 about? (write anything you remember about the basic situation and task required for trial 3.)

In trial 3, did the worker's answer seem to be correct? (please check one)

yes ____ no ____ cannot recall ____

The worker made two comments at the end of Trial 3. Please write down any of the comments that you remember the worker making at the end of trial 3. Do not worry about exact wording.

At the end of trial 3, before trial 4, what incentive did you choose?

Reward ____ Punishment ____ No Sanction ____

What was trial 4 about? (write anything you remember about the basic situation and task required for trial 4.)

In trial 4, did the worker's answer seem to be correct? (please check one)

yes ____ no ____ cannot recall ____

The worker made two comments at the end of Trial 4. Please write down any of the comments that you remember the worker making at the end of trial 4. Do not worry about exact wording.

At the end of trial 4 what incentive did you choose?

Reward ____ Punishment ____ No Sanction ____

You have not been given very much information about the worker. However, often in "real life", we are asked to answer questions or make decisions or judgments about people, things, events, etc. with incomplete information. In fact, we almost never have complete or total information about anything, but we do often have an opportunity to get some more information if we desire it. In this experiment, you have been asked to supervise a worker in a particular way. If you did have the opportunity to find out any more detailed information to help you be a better leader, what if any information would you want? Below is a list of several items about which you might find information helpful. Please read through the items carefully and place check marks in the space next to the seven items you would choose. YOU CAN CHOOSE ONLY SEVEN ITEMS, AND YOU MUST CHOOSE SEVEN ITEMS.

_____ The worker's need-for-achievement

_____ The worker's age

_____ The level of trust the worker tends to have in others

_____ The worker's goals

_____ What kind of car the worker drives

_____ The worker's ability to express him/herself

_____ The worker's GPA

_____ Where the worker lives

_____ The worker's need-for-affiliation

_____ The worker's ability to follow orders

_____ The worker's gender

_____ The worker's general level of happiness

_____ The extent to which the task was clear to the worker

_____ The worker's favorite foods

_____ The extent to which the worker feels he/she used his/her potential

_____ The worker's level of motivation in the task today

_____ The worker's race

_____ The extent to which the task was enjoyable to the worker

_____ The worker's SAT scores

_____ The worker's familiarity with computers

_____ How the worker tends to deal with conflict

Please answer the following questions:

Your gender: M _____ F _____

Your major: _____ (write "undecided" if you don't yet know)

Your year in college: _____

Have you ever been in a position of leadership? (e.g., a manager in a business setting, head of a student group, etc.)

yes _____ no _____

If you answered yes, please briefly describe the type of group or position:

Whether or not you answered yes above: if you have been or if you were to be a leader, which general leader goal do you think would be more "natural" to you?

high performance goal _____ satisfied worker goal _____

Which leader goal do you feel is the better one, in general?

high performance goal _____ satisfied worker goal _____

Please rate, as honestly as possible, the extent to which you were able to take the leader role seriously in the experiment:

0	1	2	3	4	5	6	7	8	9
Not at all									Extremely

APPENDIX F

Demographic Data Results

Effects of gender:

There were 58 female and 38 male subjects.

There were no main effects of gender. Gender interacted with leader goal and with performance level in the following ways:

There was a significant two-way interaction between gender and leader goal for attributions of worker performance to level of fit between the worker and the job, $F(1,95)=4.75$, $p<.05$. Follow up analyses showed that for female leaders, there was no effect of goal (HP-goal $M=6.2$, SW-goal $M=6.6$), whereas for male leaders, there was a significant leader goal effect, $F(1,37)=4.34$, $p<.05$, such that HP-goal male leaders attributed performance more to fit between worker and job ($M=6.6$) than did SW-goal male leaders ($M=5.3$).

There was a significant two-way interaction between gender and performance level for attributions of worker performance to effort, $F(1,95)=4.64$, $p<.05$. This interaction can be explained by the fact that for female leaders, there was no effect of performance level (HP $M=6.7$, LP $M=6.4$), whereas male leaders with a poorly performing worker attributed performance more to effort ($M=7.1$) than did male leaders with a high performing worker ($M=5.7$), $F(1,37)=4.72$, $p<.05$.

The final effect of gender was a significant two-way interaction between gender and performance level for use of punishment as an incentive, $F(1,95)=5.57$, $p<.05$. For female leaders, there was no effect of performance level on use of punishment (HP $M=0.5$, LP $M=0.5$). However, for male leaders, there was a significant effect of performance level on use of punishment (HP $M=0.4$, LP $M=1.1$), $F(1,37)=9.31$, $p<.01$.

Effects of stated "Natural Goal" and "Best Goal" of subjects:

Of the 96 subjects in the experiment, 44 stated that their natural goal would be the HP-goal, and 52 stated that the SW-goal would be their natural goal. Of the 44 who said that HP-goal was their natural goal, 23 were in the HP-goal condition, and 21 were in the SW-goal condition. Of the 52 who said that SW-goal was their natural goal, 27 were in the SW-goal condition, and 25 were in the HP-goal condition.

Of the 96 subjects in the experiment, 31 stated that the overall best goal would be the HP-goal, and 63 stated that the SW-goal would be the best goal. (Two subjects did not answer this question and were therefore not included in the analyses for effects of best goal and natural goal.) Of the 31 who said that HP-goal was the best goal, 21 were in the HP-goal condition, and 10 were in the SW-goal condition. Of the 63 who said that SW-goal was the best goal, 37 were in the SW-goal condition, and 26 were in the HP-goal condition.

There was a main effect of stated best goal on the performance rating which asked subjects to rate the worker's performance over all trials using a scale which ranged from "extremely poor" (0) to "extremely good" (9), $F(1,93)=4.18$, $p<.05$. Subjects who said that the SW-goal was the better one rated performance higher ($M=5.7$) than did those who said that the HP-goal was the better one ($M=5.0$).

There was a significant two-way interaction between stated natural goal and manipulated leader goal for rating of worker satisfaction, $F(1,93)=8.49$, $p<.01$. For subjects who said that their natural goal was the HP-goal, there was no effect of manipulated leader goal on worker satisfaction rating (HP-goal $M=4.4$, SW-goal $M=4.5$), whereas for those subjects whose stated natural goal was SW-goal, there was an effect of manipulated leader goal such that those

subjects with a manipulated SW-goal rated satisfaction higher (HP-goal M=4.1, SW-goal M=6.1), F(1,51)=13.54, p<.001.

There was a significant two-way interaction between stated natural goal and manipulated leader goal for attributions of performance to working conditions, F(1,93)=6.06, p<.05. For subjects who said that their natural goal was the HP-goal, there was no effect of manipulated leader goal on attribution to working conditions (HP-goal M=5.2, SW-goal M=4.4), whereas for those subjects whose stated natural goal was SW-goal, there was an effect of manipulated leader goal such that those with a manipulated HP-goal attributed performance more to working conditions (HP-goal M=4.4, SW-goal M=6.1), F(1,51)=7.52, p<.01.

APPENDIX G

Coding Conventions for Subjects' Instructions to Worker

The first 6 (numbers 1-6) listed are each counted in terms of the total number of times the event occurred over the 4 trials:

(1) "Let me know if you have any questions/problems"; "I'm here to help"; "Ask if you don't understand" etc.

(2) "Let me know if you have ideas"; "Your ideas are welcome" etc.

(3) "Make sure your numbers are accurate"; "Double-check your computations for accuracy" etc.

(4) Anything mentioned about incentives (not necessarily THE incentives used in the experiment, but Any mention of incentives to motivate the worker).

(5) "Thank you"; "I appreciate your work" etc.

(6) Any kind of greeting to worker (hi or whatever).

The next 4 (numbers 7-10) listed are coded per trial, for each of the four trials separately:

(7) "We"-ness used in each trial, coded as follows:
(this refers to the extent to which the leader includes the worker in the task, the idea of "we're in this together")

1-none: you do your part, I'll do mine, just focuses on what worker should do.
2-some: you do your part, but mention is made that this will help me do my part for the client; includes the worker in the process, but makes clear that the worker's part is less important.
3-a lot: uses "we" & doesn't specifically differentiate between what the worker is doing & what the leader is doing. e.g., "We need to report to the client on how his investments are doing."

(8) Level of detail given about how to do the task, coded as follows:

1-no detail: only tells worker what end result is needed, nothing about how to get there (e.g., "get an average").
2-some detail: gives some detail beyond just asking for what is needed (e.g., "get an average of the first 3 investments").
3-a lot of detail: spells out everything, leaves nothing to chance, including what form the answer needs to be in (e.g., "add up investments a, b, c, and d, and then divide that total by 4 to get the average of the 4, and then give me this average").

(9) Level of detail about what the task is for (about the clients &/or investments involved), coded as follows:

1-no detail: may mention that the work is being done for a client, but says nothing about what the client is looking for.

2-some detail: e.g., mentions the environment or toys or the fact that different investment strategies exist, but does not explain the distinction between investment toy types or which investments represent which, or what types of strategies exist, etc.
3-a lot of detail: tells the worker exactly what the project is about, describes the different investment strategies, etc.

(10) Directive-ness of orders/instructions, coded as follows:
1-not at all directive: e.g., "please average the numbers"; "I'd really appreciate it if you could..."
2-somewhat directive: e.g., "what I'd like you to do is..."; "I need you to..."
3-very directive: e.g., "sum these numbers"; "do this assignment"; "get me the numbers quickly".

APPENDIX H

Coding Conventions for Subjects' Impressions of Worker

Note that if any of the categories are not mentioned at all by a subject, the entire category is coded as "missing". (As opposed to making an assumption that by not mentioning it, the subject's view of the worker, in terms of that category, is neutral or moderate.)

In all cases, codes are either 1, 2, or 3 (or missing) as follows:

(1) Competence/ability/math skill/intelligence/qualifications for the job:
1-Low/poor
2-Adequate/moderate
3-High/good

(2) Attitude
1-Bad/negative/unwilling to work
2-Moderate
3-Good/positive/cooperative/proud of doing well

(3) Effort/Motivation
1-Low effort/needs to apply self more
2-Moderate
3-High effort/self-motivated

(4) Satisfaction with/Enjoyment of the task
1-Low/dissatisfied/complains
2-Moderate
3-High

(5) Boredom/Enthusiasm
1-Bored/uninterested/finds work tedious
2-Somewhat bored or somewhat interested
3-Enthusiastic/interested

(6) Perceptions about how worker feels about his/her role
1-Needs to be told exactly what to do, needs structure/feedback, general indications that worker is content in worker role, e.g., follows directions well
2-Moderate
3-Needs more challenge or independence, needs to know why the task is important, general indications that worker is not content in worker role

(7) Care taken in task
1-Careless/lazy
2-Moderate
3-Careful/diligent/hard-working