Information Processing and Perceptions of Leadership: Performance Cues, Prototype Matching, and Leader Sex Effects

Judith L. Nye
Monmouth University

The effects of recognition-based and inference-based process on perceptions of leaders were tested in a 3 (performance information: positive, control, negative) x 2 (leader sex) design experiment. A third continuous factor addressed leader match to participants’ prototypes. Seventy male and 245 female participants were first measured on their leadership prototypes, then responded to a male or female stimulus leader who had previously been evaluated by a supervisor. An expected main effect for performance cues was revealed, which was qualified by a significant three-way interaction on participants’ perceptions of leader effectiveness and collegiality. These findings suggest that both recognition-based and inference-based processes influence perceptions of leadership.

How do average people form impressions of the leaders in their lives? The answer to this question has been pondered for many years (Burns, 1978; Calder, 1977; Eden & Leviatan, 1975; Rush, Thomas, & Lord, 1977; Pfeffer, 1977). Everyday life provides many opportunities for interacting with a variety of leaders, and as a result of this regular exposure, individuals develop well defined implicit theories about leadership and the appropriate behaviors involved in the leadership process (Calder, 1977; Brown & Lord, 2001; Eden & Leviatan, 1975; Hogg, 2001; Lord & Emrich, 2001; Lord & Maher, 1991). The present study addressed one theory that attempts to explain the complex thinking that goes on in the minds of individuals when they are reacting to leaders. Robert Lord’s (Brown & Lord, 2001; Lord, 1985; Lord & Maher, 1991) information processing theory of leadership proposes that the social thinker evaluates leaders based upon both inference-based and recognition-based processes. Inference-based processes focus upon group outcomes. That is, the social thinker looks to past group performance information to determine leadership perceptions. Because effective leadership tends to be viewed as the major cause of good group performance, learning that a group has met an important goal lends itself to attributions of capable leadership. Thus, positive performance information of any kind may impact upon leadership perceptions (Lord & Emrich, 2001; Lord & Maher, 1991).

Lord’s recognition-based processes, on the other hand, focus on leader traits and behaviors, and how well a given leader matches the social thinker’s leadership prototype (Hall & Lord, 1998; Lord & Maher, 1990; 1991). For example, an individual may believe that good leaders play a dominant role in the group while still maintaining a positive emotional climate within the group. Or a different individual may prefer male leaders to female leaders (Lord, de Vader & Alliger, 1986; Offerman, Kennedy, & Wirtz, 1994). This individual judges the leaders he or she observes according to how well they match his or her prototypes (Bartol & Butterfield, 1976; Calder, 1977; Lord, 1985).

The present study tested the effects of both of these processes on perceptions of leaders. Inference-based processes were examined by providing participants with varying information about a stimulus leader’s performance evaluation by a supervisor. Recognition-based processes were addressed by comparing participants’ leadership prototypes with actual leader behavior, and by

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comparing participants’ reactions to both male and female leaders. Several hypotheses were proposed. First, that leaders who performed well in the past would be rated more positively than leaders who performed poorly, with control leaders falling between. Second, that leaders who more closely matched participants’ leadership prototypes would be rated more positively than leaders who did not match. Third, that male leaders would be rated more positively than female leaders. Fourth, that negatively evaluated and control leaders would be rated based upon their degree of prototype match, whereas, leaders who had been positively evaluated in the past would be rated highly regardless of prototype match. And finally, that negatively evaluated female leaders would be rated the lowest of all leaders.

Method

Participants

Participants were 70 male and 245 female undergraduate students who either participated in a research participant pool or were recruited from their classes. Eighty-nine percent were White or of European ancestry. Their mean age was 20.0 years.

Materials

Participants’ leadership prototypes were assessed using the System for the Multiple Level Observation of Groups (SYMLOG) measure developed by Bales (Bales, Cohen, & Williamson, 1979). This 26-item measure taps into three dimensions of interpersonal behavior: dominant/submissive, friendly/unfriendly, and instrumentally controlled/emotionally expressive. Note that Bales et al. (1979) conceptualized the instrumentally controlled/emotionally expressive dimension as analogous to the common leadership roles of task-oriented and socioemotional-oriented.

Resumes and performance evaluations of a hypothetical hospital administrator made up the stimulus materials. Performance evaluations varied in terms of how positive and negative they were. For example, participants in the good performance condition read the following about the stimulus leader’s planning and analytical, “Shows competence, originality in problem solving, systematic, thorough. Develops a plan of action, then carries it out” whereas participants in the poor performance condition read the following, “Adequate problem-solver; would like to see more creativity here, however. Develops a plan of action, then carries it out.” In the control condition, the leader’s behaviors were merely described rather than evaluated. To manipulate leader sex, participants read about either Alice or Robert Bailey.

After exposure to the stimulus materials, participants responded to a series of questions about their reactions to the stimulus leader. Participants reported their overall impression of the stimulus leader on a five-item measure from Hall and Lord (1998; e.g., “How much leadership do you think was exhibited by this individual?”). Delving a bit deeper, perceptions of leader effectiveness and collegiality were assessed with ten items adapted from Nye and Forsyth (1991). Five items addressed their perceptions of effectiveness (e.g., “In your opinion, how effective is this administrator’s leadership style?”), and five items addressed their perceptions of collegiality (e.g., “Would you like to work for this individual?”). Participants responded to all items on 7-point scales, with anchors appropriate for their items.

Design and Procedure

Six versions of the performance evaluation were randomly presented to participants in this 3 (performance information: good, control, poor) x 2 (leader sex) design study. A continuous factor, prototype match, was created by comparing participants’ pre-measure responses against the behavior of the hypothetical leader (determined by independent judges) via Euclidean distance. According to the judges, the stimulus

leader was quite task-oriented in his or her leadership style (2 U, 0 P, 12 F on the SYMLOG measure: slightly dominant, neither friendly nor unfriendly, very controlled). The comparison of participants’ prototypes and stimulus leaders revealed that the actual stimulus leaders were less friendly and more instrumentally controlled than participants’ prototypes, although stimulus leader dominance was generally a good match.

Data were collected from individual participants and small groups. Participants first read and signed informed consent forms. Next, they answered the SYMLOG measure, then read through the resume and performance evaluation of their stimulus leader. Finally, they completed the dependent measure and provided
Participants’ responses to the dependent measure items were averaged and submitted to hierarchical multiple regression. Predictors included performance information (split into two predictors, good vs. poor and control vs. poor), leader sex, prototype match, and all interactions (using contrast coding on categorical predictors). A significant main effect for performance information was revealed on all three measures (see Table 1). As predicted, participants in the good performance conditions rated the hypothetical leader more positively than did participants in the poor performance condition, with control participants falling between.

This main effect was qualified by a significant three-way interaction on the effectiveness measure [control vs. poor; $t(294) = -3.5, p = .001, \$ = -.92$] and the collegiality measure [control vs. poor; $t(294) = -2.1, p = .04, \$ = -.60$]. Figure 1 depicts participants’ effectiveness ratings of the leaders; the pattern of regression lines was similar for both dependent measures. As shown in the figure, performance cue effects were modified by the effects of the other two variables. The only leaders who were rated in a way consistent with prototype-matching were female leaders in the control conditions and male leaders in the poor performance conditions. In both cases, leaders who matched prototypes were rated as more effective than leaders who violated prototypes. Interestingly, however, these patterns were reversed for female leaders in the poor performance conditions and male leaders in the control conditions. In both cases, leaders who violated participants’ prototypes received better ratings than leaders who were a good match.

Discussion

Only one of the proposed hypotheses was supported by the data in the present study. That is, leaders who had been evaluated positively by their supervisors received better participant ratings than leaders who had been evaluated negatively, with control leaders falling between. The other proposed main effects and interactions were not revealed; participants did not differ in their ratings of leaders due to these other predictors.

Thus, the present data suggest clear reliance on inference-based processes on the part of participants, a finding consistent with the past literature on the power of the performance cue effect (Lord & Emrich, 2001;
Lord & Maher, 1991; Lord et al., 1978; ). Other predictors may have paled in comparison to performance information. Upon reflection, judging leaders by their past outcomes is an easy inference to make (Calder, 1977; Pfeffer, 1977). In the minds of participants, past successes and failures may be seen as compelling evidence of a leader's strengths and weaknesses. Fritz Heider referred to this tendency to rely on past performance information the "suasion of success": "Success convinces us of the worth of a person even if the success is largely due to chance circumstances" (1958, p. 5).

This dominance on the part of performance cues was particularly evident in participants' global leadership impressions. The influence of the other two recognition-based predictors was only revealed in participants' responses to the effectiveness and collegiality items. Analyses revealed a significant three-way interaction in participants' responses to these items. To a certain extent, this interaction revealed predictable patterns of leadership perceptions. Both male leaders in the negative evaluation condition and female leaders in the control condition were judged in accordance with their degree of matching with participant prototypes. These responses suggest that participants called upon their leadership prototypes to assist their evaluations of the stimulus leaders.

However, this interaction also revealed less clear influence on the part of the predictors. Particularly perplexing were participants' responses to the female leaders in the negative evaluation condition. Although these female leaders who were a good match with participants' leadership prototypes they were rated the lowest of all leaders. Speculating, this may be the work of the third predictor, sex of leader. It may be that participants had male leaders in mind when they recorded their prototypes (Lord, de Vader & Alliger, 1986; Offerman, Kennedy, & Wirtz, 1994). When presented with a female task-oriented leader, these participants may have felt that she was violating her gender role. Thus, when she received a poor evaluation from her supervisor, participants responded with lower effectiveness and collegiality ratings. In short, these participants may have believed that they preferred a task-oriented leader, and would have accepted a female task-oriented leader – except that she failed. Other participants with similar prototypes were still be willing to defend the negatively evaluated task-oriented male leader. These are speculations, however. Future research should tap into the masculine vs. feminine nature of individual leadership prototypes. Although this strategy might be difficult to achieve without creating troublesome demand characteristics, it would be worth pursuing.

The present findings suggest that leader sex still plays a role in perceptions of leaders, a finding that is consistent with past research (Deaux, 1984; Eagly, Karau & Makhijani, 1995; Eagly, Makhijani Klonsky, 1992; Forsyth, Heiney, & Wright, 1997; Hollander, 1985; Nye & Forsyth, 1991; Rudman & Kilianski, 2000). These findings underscore the importance of including sex of leader as a variable in leadership research. The social thinker may still hold different standards for male and female leaders.

In summary, the present findings are consistent with Lord’s (Lord & Maher, 1990, 1991) assertion that both inference-based processes and recognition-based processes operate in leadership perceptions, findings which are consistent with those of past research (Binning & Lord, 1980; Larson, 1982; Nye, 2002; Phillips, 1984).

Figure 1. Mean effectiveness ratings of male and female leaders, as a function of performance information and prototype match.
The power of past outcomes on leadership perceptions was quite evident in the present study, perhaps overshadowing the effects of recognition-based processes. Recognition-based processes, however, were still evident as well. Both prototype matching and sex of leader appeared to affect perceptions of leader effectiveness and collegiality. Moreover, the present study goes beyond much of the past research addressing recognition-based processes in that individual differences in implicit theories were tested. Lord (Lord, Brown, & Harvey, 2001; Lord & Maher, 1991) acknowledges that such individual differences in prototypes exist, but has not tended to address these differences in his own research. The present findings suggest that such differences should be explored more fully.

References


