

Relationships between leader reward and punishment behavior and subordinate attitudes, perceptions, and behaviors: A meta-analytic review of existing and new research

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Abstract

Despite decades of research on the relationships between leader reward and punishment behaviors and employee attitudes, perceptions, and performance, no comprehensive examination of these relationships has been reported in the literature. This paper reports the results of two studies that address this issue. In the first study, data from 20 new samples were gathered on the relationships between leader reward and punishment behaviors and some criterion variables that have not been examined extensively in previous research. In the second study, a meta-analytic review was conducted incorporating both the new and existing research in order to provide estimates of the bivariate relationships between these leader behaviors and a variety of employee criterion variables across 78 studies containing 118 independent samples. Results of regression analyses designed to control for the effects of the other leader behaviors showed that: (a) the relationships between leader reward and punishment behaviors and employee attitudes, perceptions, and behaviors were more functional when the rewards or punishments were administered contingently than when they were administered non-contingently, and (b) these leader reward and punishment behaviors were strongly related to two variables (employees' perceptions of justice and role ambiguity) that were expected to be key mediators of the relationships between these leader behaviors and the employee criterion variables. In addition, meta-analytic evidence from longitudinal studies suggested that the same leader behavior can be a cause of some employee criterion variables, and a consequence of others. Implications of these findings for future research in the area are discussed.

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Ever since leader reward and punishment behaviors were introduced into the field in the 1970s (cf. Scott, 1977; Sims, 1977; Sims & Szilagyi, 1975) they have been seen as central to the role of leaders, because they are important determinants of employee attitudes, percep-

tions and behavior. For example, in what he termed a reinforcement analysis of leadership, Sims (1977) proposed that leadership itself may be viewed as the management of reinforcement contingencies in work settings, and that the administration of reinforcing events contingent upon desirable or appropriate forms of employee behavior is critical to the development and maintenance of employee performance. From this perspective, positive reinforcers made contingent upon appropriate task behaviors should increase subordinate performance,

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while negative reinforcers (or aversive stimuli) should increase escape and/or avoidance responses on the part of employees. If these escape responses include functional task behaviors, then negative feedback may also lead to increases in employee performance.

Similar predictions regarding the effects of leader contingent and non-contingent reward behaviors were also incorporated into the path-goal model of leadership (cf. Evans, 1970; Fulk & Wendler, 1982; House, 1971; House & Mitchell, 1974). Path-goal theory suggests when a leader establishes a close linkage between subordinate performance and rewards it will increase performance, because such linkages increase the subordinate's perception of instrumentality (cf. Evans, 1970; House, 1971), and increase job satisfaction, because high performers should receive rewards of greater magnitude and frequency.

Leader reward and punishment behavior is also the heart of what is called transactional leadership (cf. Avolio, 1999; Bass, 1985; Burns, 1978; Howell & Avolio, 1993). According to Burns (1978), Bass (1985, 1998), and others (cf. Atwater, Cambobeco, Dionne, Avolio, & Lau, 1997; Avolio, 1999), transactional leaders are those who establish a “give and take” relationship with their subordinates in which the leader provides rewards to employees in exchange for their performance on the job. In their theories, transactional leaders can motivate followers either by clarifying expectations and identifying the rewards that they will receive for meeting these expectations (e.g., using contingent rewards), or by taking corrective actions when followers do not perform effectively. More specifically, Bass (1985, p. 122) argues that:

Directly or indirectly, leaders can provide rewards for progress toward ... goals or for reaching them. Or, they can impose penalties for failure ranging from negative feedback to dismissal. Such positive and aversive contingent reinforcement are seen as the two ways managers in organizational settings engage in transactional leadership to motivate employees. Contingent positive reinforcement... reinforces... employee performance. Contingent aversive reinforcement is a manager's reaction to an employee's failure to achieve the agreed-upon performance. The manager's reaction signals the need to...modify or change the employee's behavior. It signals the need for a reclarification of what needs to be done and how (Bass, 1985, p. 122).

However, despite the obvious importance of leader reward and punishment behavior to these theories of leadership, no comprehensive meta-analytic review of the relationships between these key managerial behaviors and subordinate criterion variables exists. Of course, this is not to say that this important area has been totally neglected. Indeed, two meta-analyses (Lowe, Kroeck, & Sivasubramaniam, 1996; Judge & Piccolo, 2004) have

been conducted, and both show the potential importance of contingent reward behavior in determining leadership effectiveness. For example, Lowe et al. (1996) reported that transactional leadership (in the form of contingent reward behavior) had a mean corrected correlation of .41 with leadership effectiveness, and Judge and Piccolo (2004) found that contingent reward behavior had stronger relationships than transformational leadership with three of the six criterion variables they examined (follower job satisfaction, motivation, and leader job performance), leading them to conclude that future research should study these behaviors in more detail.

Unfortunately, both the Lowe et al. (1996) and the Judge and Piccolo (2004) meta-analyses are somewhat limited in scope with respect to the forms of leader reward and punishment behavior and the range of criterion variables they examined. For example, because these meta-analytic reviews focused on the transformational/transactional leadership model, they were limited to studies that included both transactional and transformational leadership behavior. Thus, research examining leader reward and punishment behavior using alternative leadership frameworks, such as the path-goal or reinforcement approaches, were outside the scope of these reviews. This is an important issue, because there have actually been more studies conducted on leader reward and punishment behavior using other conceptual frameworks, than there have been using the transformational/transactional approach. In addition, because of their interest in the transformational/transactional leadership model, the Lowe et al. (1996) and Judge and Piccolo (2004) meta-analyses focused on a relatively limited set of criterion variables, and did not consider the relationships between leader reward and punishment behaviors and important employee criterion variables like role perceptions (e.g., role ambiguity), justice perceptions (e.g., distributive justice, procedural justice), employee attitudes (e.g., organizational commitment, trust in one's supervisor), and employee behaviors (e.g., task performance, extra-role behaviors). Finally, these meta-analyses did not include all four forms of leader contingent and non-contingent reward and punishment behavior. This is noteworthy because the predicted relationships between contingent forms of leader reward and punishment behaviors and employee attitudes, perceptions, and behaviors are substantially different from the predicted relationships between non-contingent forms of leader reward and punishment behavior and these same criterion variables; and because it is important to understand the relative magnitudes of their unique effects on these criterion variables.

Therefore, the purpose of this paper is to report the results of two studies that provide a more comprehensive empirical summary of what is known about (a) the relationships between leader contingent and noncontingent

reward and punishment behaviors and employee attitudes, role perceptions and performance, and (b) their relative (unique) effects on these criterion variables. More specifically, the goal of Study 1 was to gather data on the relationships between leader reward and punishment behaviors and a wide variety of criterion variables, some of which have not been examined extensively in previous research in the field. In Study 2, we provide a meta-analytic review incorporating all of the published data on the relationships between leader reward and punishment behavior and a wide variety of employee attitudes, perceptions and behaviors, plus the previously unpublished data from Study 1. In contrast to the limited scope of previous meta-analyses, an attempt was made in Study 2 to include every published article that has examined leader reward and punishment behavior, regardless of the theoretical orientation of the authors. Before presenting the results of our two studies, we will first briefly review several hypotheses regarding the differential relationships expected between leader contingent and non-contingent reward and punishment behaviors and employee criterion variables included in this research.

Hypotheses

Although leader reward and punishment behaviors have been recognized as key forms of leader behavior for decades, surprisingly little attention has been given to articulating the reasons why they influence employee criterion variables. On the one hand, one could argue that it does not matter why these behaviors influence performance; all one needs to know is that they do. Indeed, Scott (1977) and Luthans and Kreitner (1975) and Stajkovic and Luthans (1997) would argue that it is not even necessary for employees to consciously recognize the contingency between the rewards and punishments administered by the leader and their own behavior. This would suggest that leader reward and punishment behaviors may be directly related to employee outcome variables without any mediating cognitive mechanisms; and there is evidence to support this (cf. Keller & Szilagyi, 1978; Podsakoff, Todor, Grover, & Huber, 1984; Sims, 1977).

However, there is also evidence that the manner in which leaders administer rewards and punishments affects internal cognitive processes on the part of employees that subsequently influence employee attitudes and behaviors. This would suggest that we need to understand how leader reward and punishment behaviors influence employee cognitive processes. We propose two main mechanisms through which leader reward and punishment behaviors influence employee attitudes, perceptions, and behaviors. One is that leader reward and punishment behaviors affect employee perceptions of

fairness (Ball, Trevino, & Sims, 1992; Greenberg, 1990; Trevino, 1992). Many employees believe that the outcomes they receive from an organization should be linked to the contributions they make to the organization. So leaders who administer reward/punishments based on this equity rule will be perceived as fairer than leaders who allocate rewards/punishments based on some other rule (e.g., equality, need, seniority, etc.). Indeed, Greenberg (1990, p. 175), has noted that one way leaders can enhance employee perceptions of fairness is to clarify their "...beliefs about what outcomes they may expect to receive for the work they do." This is also consistent with Farh, Podsakoff, and Cheng's (1987) hypothesis that, because they explicitly link their praise, commendations, and social approval to the performance levels of their employees, leaders who administer rewards contingently will be perceived to be fairer than leaders who administer rewards non-contingently. Thus, because many employees feel that for equity reasons rewards ought to be linked to job performance, they recognize the fairness of a procedure that administers rewards in this manner. Leaders who administer rewards contingently will be perceived to be fairer in a procedural sense because they are adhering more closely to equity principles in their reward allocation procedures, and in a distributive sense, because employees will perceive the outcomes of this type of reward allocation procedure to be deserved.

Similarly, leaders who administer punishments contingently should be perceived to be fairer than leaders who administer punishments non-contingently, because they clearly link their reprimands and social disapproval to the performance levels of their employees. This is consistent with Ball et al. (1992) who proposed that, "punishment contingent upon undesired behavior will be positively related to subordinate's procedural justice evaluations" (p. 311); and that when subordinates perceive that they have been punished appropriately they "will evaluate the punishment as more distributively just" (p. 315). It is also consistent with Trevino (1992), who has noted that punishment administered contingently enhances employees' perceptions of retributive justice. Thus, there is good reason to believe that leaders who administer punishments contingently will be perceived to be fairer from a distributive, procedural and retributive justice perspective, than leaders who administer punishments non-contingently.

It is important that employees perceive they are treated fairly, because these perceptions have been found to be related to a variety of important outcomes, including employee satisfaction, commitment to the organization, trust in one's leader, withdrawal behaviors, task performance and organizational citizenship behaviors (e.g., Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Folger & Konovsky, 1989; Greenberg, 1990). Although it makes sense that leader

reward and punishment behavior might influence these outcomes through its effect on perception of fairness, the only empirical evidence in support of this mechanism is from a single study (Pillai, Schriesheim, & Williams, 1999) that examined the effect of leader contingent reward behavior (but neither contingent punishment behavior nor non-contingent reward or punishment behavior) on perceptions of distributive justice. Therefore, additional evidence of the relationship between leader reward and punishment behavior and employee perceptions of justice is needed, but our expectation is that:

Hypothesis 1. The relationships between leader reward (punishment) behavior and employee perceptions of justice will be more positive when the rewards (punishments) are administered contingently upon subordinate performance than when they are administered non-contingently.

A second important mechanism through which leader contingent reward and punishment behavior influences employee criterion variables is that it clarifies which behaviors the leader desires the employee to exhibit. When employees consciously recognize that some behaviors are rewarded by the leader and some are punished, it clarifies their understanding of what the leader would like them to do. This is important because reducing role ambiguity has been shown to increase job satisfaction, organizational commitment and task performance, and decrease employees' anxiety, tension, and propensity to leave (Jackson, Schwab, & Schuler, 1986; MacKenzie, Podsakoff, & Ahearne, 1998; MacKenzie, Podsakoff, & Rich, 2001; Tubre & Collins, 2000). In contrast, when leaders administer rewards and punishments in a manner that is unrelated to an employee's behavior, the employee may be likely to become confused about what he or she can do to obtain desired outcomes. Thus, when leaders administer rewards and punishments contingent upon certain behaviors, they clarify their expectations of what they want employees to do, and thereby reduce role ambiguity (or enhance role clarity). Indeed, Sims and Szilagyi (1975) have argued that leader contingent punishment behavior "is related to satisfaction through [its ability to reduce] perceived role ambiguity..." (p. 436). This expectation has been supported in several studies (Bateman, Strasser, & Dailey, 1983; Podsakoff et al., 1984; Sims & Szilagyi, 1975). Therefore, we expect that:

Hypothesis 2. The relationships between leader reward (punishment) behavior and subordinate role ambiguity will be more negative when the rewards (punishments) are administered contingent upon subordinate performance than when they are administered non-contingently.

Employee effort and performance

As noted by Farh, Podsakoff, and Organ (1990), contingent rewards and punishments enhance employee

perceptions of fairness and, when employees feel they are being treated fairly, they are more likely to work harder, resulting in higher levels of in-role and extra-role behavior (cf. Ball et al., 1992; Ball, Trevino, & Sims, 1994; Konovsky & Pugh, 1994; Moorman, 1991; Organ, 1988). In contrast, rewards and punishments administered in a manner that is perceived not to be contingent upon performance are likely to be seen as unfair because they are administered arbitrarily, and thus should be de-motivating and be negatively related to employee in-role and extra-role (citizenship) behavior. The negative relationship should especially hold true for non-contingent punishment behaviors, because employee performance is more likely to be disrupted when employees receive punishments that they do not think they deserve, than when they receive rewards that they do not think they deserve. Thus,

Hypothesis 3. The relationship between leader reward (punishment) behavior and subordinate effort and in-role and extra-role performance will be more positive (or less negative) when the rewards (punishments) are administered contingent upon subordinate performance than when they are administered non-contingently.

Group-level or unit performance

Several authors (cf. Hardin, 1968; Lawler, 1971; Schelling, 1971) have provided examples of the potentially dysfunctional consequences that may result from rewarding group members on an individual basis. These examples suggest that although individually administered rewards may increase the motivation of group members, this motivation may be channeled into behavior that is counterproductive to the group as a whole. However, Stogdill (1972) reported that group drive (or motivation) is generally positively related to group productivity, suggesting that leader behaviors that increase a group's drive will also increase a group's productivity. Moreover, Zander (1971) has noted that group drive generally results in increased group productivity, but only when group members are provided with accurate feedback (i.e., feedback that is contingent upon their level of performance). Since leaders who administer contingent rewards and punishments provide feedback that is perceived to be fair with respect to the level of performance of group members (cf. Trevino, 1992), but leaders who administer rewards and punishments non-contingently do not provide feedback that is perceived to be fair with respect to group members' performance levels, we would expect the following:

Hypothesis 4. The relationship between leader reward (punishment) behavior and group or unit-level performance will be more positive (or less negative) when the rewards (punishments) are administered contingent upon subordinate performance than when they are administered non-contingently.

Employee attitudes and perceptions

As noted earlier, leaders who administer rewards and punishment contingently are expected to reduce employees' perceptions of role ambiguity. This should have a positive effect on employee attitudes and perceptions of their organization, because role ambiguity creates stress, decreases employees' motivation to learn, and hinders their ability to achieve valued goals (Cavanaugh, Boswell, Roehling, & Boudreau, 2000; LePine, LePine, & Jackson, 2004). In addition, because leaders who administer rewards and punishments *contingently* provide positive feedback, compliments, and special recognition to those employees who *deserve* to be rewarded, and verbal reprimands, expressions of disapproval, and demonstrations of their displeasure to employees who *deserve* to be punished, they will be perceived to be fairer (distributively, procedurally, and retributively) than those that administer rewards and punishments non-contingently (cf. Adams, 1965; Farh et al., 1990; Pillai et al., 1999; Trevino, 1992). And, because employees who are treated fairly will have more positive attitudes toward their jobs and the organization (cf. Greenberg, 1990; Organ, 1988; Podsakoff, MacKenzie, Moorman, & Fetter, 1990; Shore & Shore, 1995; Rhoades & Eisenberger, 2002), we expect that:

Hypothesis 5. The relationships between leader reward (punishment) behavior and employee (a) expressions of trust in their leader, (b) satisfaction, (c) commitment, (d) perceptions of organizational support, and (e) intentions to stay will be more positive (or less negative) when the rewards (punishments) are administered contingently than when they are administered non-contingently.

Employee cynicism about organizational change

Finally, Andersson (1996) has argued that employees who are not treated with respect by their managers, or who perceive that their managers misuse their authority, are likely to become less trusting and more cynical of their organization and the leaders within it. Similar arguments have been made by Wanous, Reichers, and Austin (2000), when discussing the causes of employee's cynicism about organizational changes. These authors also note that it is important for managers to reinforce appropriate behavior during times of change. Since leaders who use non-contingent rewards and punishments are more likely to be seen as abusing their authority, not treating people with respect, and not reinforcing appropriate behavior, such leader behaviors would be expected to produce more employee cynicism about change than leaders who use contingent rewards. Thus,

Hypothesis 6. The relationships between leader reward (punishment) behavior and employee cynicism about organizational change will be more negative (or less pos-

itive) when the rewards (punishments) are administered contingent upon subordinate performance than when they are administered non-contingently.

Study 1—Research conducted in new samples

As noted earlier, our first study was designed to report the findings of some new research on the relationships between leader reward and punishment behaviors and a variety of subordinate criterion variables. This study reports data from 20 new samples with a total *N* of 4988. These samples came from a large-scale study designed to examine the relationships between leader reward and punishment behaviors and employee criterion variables in a variety of manufacturing firms. The company contacts came from two major sources: (1) a letter sent out to manufacturing firms employing between 100 and 500 people in a Midwestern state, and (2) presentations made at local Chamber of Commerce meetings in areas with large numbers of manufacturing companies. The samples were different enough to provide significant variation in the type of individual employed, but comparable in that they were all organizations whose primary function was to manufacture and sell products.

Method

Samples and data acquisition

The study's second author administered an employee survey on-site as each location scheduled time for all employees to take part in the study. Each employee received a survey, a letter from the researcher assuring the confidentiality of his or her responses, and a letter from the company's president guaranteeing the confidentiality of the data. During the same day that the employee data were collected, the researcher provided supervisors with performance appraisal forms containing the names of their immediate subordinates. The names for the performance appraisal forms were obtained from company records. These researcher-provided instruments were necessary because the company did not have a consistent performance appraisal mechanism across locations and levels.

Table 1 summarizes the characteristics of the 20 new samples obtained for this study. As indicated in this table, the samples ranged in size from a low of 61 to a high of 634 employees with an average sample size of 249. The response rates in these samples were extremely high, ranging from 80 to 94% with an average of 89.55%. These atypical response rates were probably due to the fact that the data gathering was endorsed by senior management in each company and employees were given

Table 1
Summary of sample characteristics

	Job classification					Age	Gender	Co. tenure	Tenure w/Super.
	Response rate (%)	Manage. (%)	Prod. (%)	Admin./ clerical (%)	Other (%)				
Sample 1–209 employees of three plants of a manufactured steel building supply firm	92	5	73	2	20	36.55 (12.15)	92% male	8.33 (8.47)	2.36 (3.26)
Sample 2–347 employees of 2 metal stamping plants	91	10	42	13	35	31.64 (12.94)	86% male	8.01 (7.72)	2.31 (3.42)
Sample 3–174 employees of a rolled steel goods factory in the Western U.S.	87	10	72	5	13	36.05 (9.95)	80% male	3.12 (3.79)	2.14 (2.78)
Sample 4–189 employees of two specialty stamped steel factories	88	11	72	6	11	36.22 (10.54)	88% male	4.94 (5.97)	2.41 (3.27)
Sample 5–121 employees of a Midwestern tool and die company	92	10	14	6	70	34.19 (11.04)	76% male	5.54 (5.78)	2.90 (3.16)
Sample 6–138 employees of a Midwestern furniture manufacturer	96	14	79	3	4	35.49 (10.30)	46% male	NA	6.12 (6.22)
Sample 7–61 employees of a Midwestern wood products company	85	16	77	7	2	29.82 (9.47)	64% male	NA	2.89 (5.18)
Sample 8–76 employees of a Midwestern residential building supply firm	88	15	70	10	5	33.01 (9.67)	59% male	NA	1.70 (3.18)
Sample 9–188 employees of an electronics repair company	97	10	65	8	17	33.44 (11.74)	55% male	5.31 (5.77)	2.07 (2.04)
Sample 10–196 employees of a greeting card manufacturer	80	21	33	11	35	33.73 (8.23)	31% male	NA	2.27 (2.62)
Sample 11–634 employees of a national textile company	88	10	78	7	5	36.31 (11.04)	35% male	8.00 (7.22)	3.56 (4.42)
Sample 12–179 employees of a full service textile producer	89	15	60	10	20	39.43 (10.91)	70% male	12.09 (8.49)	4.79 (5.38)
Sample 13–139 employees of 2 small sewing assembly plants	91	10	80	8	2	38.10 (12.22)	75% male	4.42 (4.55)	2.22 (3.20)
Sample 14–342 employees of a Southern textile mill	92	12	61	7	10	35.01 (10.03)	54% male	7.10 (6.90)	2.92 (3.01)
Sample 15–230 employees of a textile manufacturer	90	5	90	5	0	36.15 (9.44)	22% male	6.18 (5.77)	NA
Sample 16–244 employees of two small sewing operations	94	12	80	1	7	37.11 (11.53)	57% male	6.37 (6.03)	NA
Sample 17–169 employees of a textile firm	88	12	63	15	10	39.95 (10.52)	29% male	13.41 (8.74)	NA
Sample 18–299 employees of 2 Western metal fabrication plants	81	10	65	5	20	36.22 (10.22)	85% male	2.93 (3.17)	1.45 (1.81)
Sample 19–613 employees of 3 industrial building supply facilities	92	10	48	20	22	36.87 (10.85)	81% male	7.28 (7.71)	1.86 (2.38)
Sample 20–440 employees of 3 metal stamping/painting plants	90	11	76	5	8	38.42 (11.59)	95% male	6.69 (6.82)	2.71 (2.73)

Note. NA means that the information was not available from this sample.

company time to complete the questionnaires. Almost two-thirds (64.9%) of the employees included in these samples were production workers, although the percentage of production workers ranged across the samples from a low of 14% in sample 5 to a high of 90% in sample 15. The average age across all 20 samples was 35.69 years old, and the majority of employees were males (65%) who had worked in their company for almost 7 years, and for their present supervisor for almost 3 years.

Measures

All of the measures used in the present study have been reported in previous research in the field. Measures of leader behaviors, job attitudes, and job perceptions were collected from employees, while the matching measures of employee effort and performance were obtained from their supervisors. However, given the desire of the senior management teams in all of the samples to keep the questionnaires to a reasonable length, not all of the measures were included in all of the samples.

Leader reward and punishment behaviors

A slightly shortened version of the questionnaire developed by Podsakoff and Skov, and reported first in Podsakoff, Todor, and Skov (1982) was used to measure leader reward and punishment behaviors in this study. This scale measures four aspects of leader behavior: (1) contingent reward behavior (5 items, shortened from 10 items), contingent punishment behavior (5 items), non-contingent reward behavior (4 items), and non-contingent punishment behavior (4 items). Previous research (cf. Barge & Schlueter, 1991; Podsakoff et al., 1984; Schriesheim, Hinkin, & Tetrault, 1991) has shown the individual items on this questionnaire load on their intended factors and that each of the scale's four dimensions possesses adequate internal consistency reliability. A shortened version of this scale was used in this research because most of the organizations wanted to keep the length of the questionnaire to a minimum, and because preliminary work we had conducted in other samples had indicated that the shortened version of the questionnaire had good reliability and produced relationships that were very similar to those with the full 10-item scale.

Employee attitudes and job perceptions

General satisfaction was measured with the Michigan Organizational Assessment Questionnaire (MOAQ; Cammann, Fichman, Jenkins, & Klesh, 1983). This scale measures overall job satisfaction using three items, and has been shown (cf. Sanchez, Kraus, White, & Williams, 1999) to be factorially distinct from constructs such as organizational munificence, high-involvement human resource practices, and benchmarking, and to possess adequate internal consistency reliabilities (cf. McFarlin

& Rice, 1992; McLain, 1995; Pearson, 1991). The MOAQ was also used to measure five facets of employee satisfaction, including *satisfaction with: supervision* (3 items), *coworkers* (3 items), *pay* (2 items) *job security* (2 items), and *growth opportunities* (4 items). Cammann et al. (1983) have reported that these facet measures of satisfaction possess adequate psychometric properties. *Organizational commitment* was measured with the short form (9 items) of Porter, Steers, Mowday, and Boulian's (1974) Organizational Commitment Questionnaire (OCQ), while *affective* and *continuance commitment* were measured with Meyer and Allen's (1997) 6-item measures. Mowday, Steers, and Porter (1979) and Porter et al. (1974) have provided evidence in support of the construct validity of the OCQ. In addition, the shortened version of this scale has been shown to correlate strongly with the original 15-item version (Huselid & Day, 1991), and be factorially distinct (Cohen, 1996) from several related constructs such as job involvement, career commitment, and work involvement. Meyer, Allen, and Smith (1993) have shown the items on the 6-item affective and continuance scales load on their intended factors, and possess good internal consistency reliabilities. *Distributive justice* was measured with Price and Mueller's (1986) 6-item distributive justice scale, while *procedural justice* and *interactional justice* were assessed using Niehoff and Moorman's (1993) 6-item and 8-item measures, respectively. McFarlin and Sweeney (1992), Moorman (1991), and Sweeney and McFarlin (1993) have provided evidence that Price and Mueller's (1986) distributive justice scale possesses adequate internal consistency reliability; and Niehoff and Moorman (1993) and Aquino et al. (1999), have provided evidence that Niehoff and Moorman's (1993) procedural and interactional justice scales are unidimensional and possess adequate internal consistency reliability. *Perceived organizational support* was assessed using Eisenberger, Huntington, Hutchison, and Sowa's (1986) short form (9 items) from the Survey of Perceived Organizational Support. The shortened measure has been used in a variety of studies (cf. Rhoades & Eisenberger, 2002) and has been shown to possess good psychometric properties. *Trust in and loyalty to one's supervisor* was measured with Podsakoff et al.'s (1990) 6-item scale. This scale has been shown to be unidimensional and have good reliability (cf. Podsakoff et al., 1990; Podsakoff, MacKenzie, & Bommer, 1996). Employees' *intentions to leave* were assessed with Cammann et al.'s (1983) 3-item turnover intention scale. These authors have provided evidence that this scale is unidimensional, and possesses good internal consistency reliability. Finally, Wanous et al.'s (2000) 8-item scale was used to assess employees' *cynicism about organizational change*. Wanous et al. (2000) provide evidence that this scale factors into a single dimension, with acceptable internal consistency reliability.

Employee effort and performance

As noted earlier, unlike the measures of leader behavior and employees' attitudes and perceptions, all of the measures of employee effort and performance taken in the 20 samples included in this study were obtained from the employees' supervisors. *Employee effort* was measured with a single-item from Bass's (1985) extra effort scale. *Employee in-role (task) performance* was assessed with a shortened version (4-items) from Williams and Anderson's (1991) in-role performance measure, while *overall employee performance* was assessed with the three item scale developed by MacKenzie, Podsakoff, and Fetter (1991, 1993). Research has shown that the items on Williams and Anderson's (1991) in-role performance measure load on a single factor, and that the scale possesses good internal consistency reliability (cf. Funderburg & Levy, 1997; Morrison & Phelps, 1999; Thompson & Werner, 1997). Similar support for the psychometric properties of MacKenzie et al.'s overall performance measure has also been reported (cf. MacKenzie et al., 1991, 1993). In addition to employee effort and task performance, several measures of employee *citizenship behavior* were also assessed in the present study, using a slightly reduced version of the scales developed by Podsakoff et al. (1990). The items included on this scale measure all five of "citizenship behavior" dimensions identified by Organ (1988), including altruism, courtesy, conscientiousness, civic virtue and sportsmanship. Previous research (cf. MacKenzie et al., 1991, 1993; Niehoff & Moorman, 1993) has generally shown this scale to possess good validity and quite acceptable levels of internal consistency reliability.

Seven-point Likert scales ranging from (1) "strongly disagree" to (7) "strongly agree" were utilized to assess all of the constructs measured in the present study.

Results

Our analysis indicated that the majority of the measures used in the present study met or exceeded Nunnally and Bernstein's (1994) recommended internal consistency reliability criterion level of .70. Indeed, all but two of the scales (non-contingent reward behavior and satisfaction with coworkers) had an average alpha of .70 or above. In addition, 87% of the 267 multi-item measures used in all 20 samples in the present study met or exceeded this criterion level. Thus, with a few exceptions, the measures included in our study possessed adequate levels of reliability. (Complete descriptive statistics, including the means, standard deviations, and reliability estimates are available upon request from the first author.)

Table 2 reports the correlations between the leader reward and punishment behavior scales and all the criterion variables in each sample. Overall, the pattern of relationships reported in this table is supportive of our

hypotheses. For example, leader contingent reward behavior is generally more strongly positively related to employee attitudes, perceptions and behaviors than is leader non-contingent reward behavior. In addition, leader non-contingent punishment behavior is generally negatively related to these employee criterion variables whereas leader contingent punishment behavior is generally positively related to them. However, since these results will be incorporated into our meta-analysis in Study 2, we will reserve our complete discussion of these findings until that time.

Study 2—Meta-analysis of new and existing data

The purpose of our second study was to test the hypothesized relationships by incorporating the findings of Study 1 with the existing published field studies on the relationships between leader contingent and non-contingent reward and punishment behavior and employee criterion variables. Therefore, we tried to identify all existing published research that reported relationships between leader rewards and punishment behaviors and employee attitudes, perceptions, and behaviors and employed meta-analytic techniques to test our hypotheses.

Method

Literature search

In addition to the data obtained from the original research described in Study 1, studies included in our meta-analysis were located using a variety of methods. First, we conducted a computerized search of the *PsychINFO*, *ABI-INFORM*, and *ERIC* databases using the key words "leader reward behavior," "leader punishment behavior," "contingent reward behavior," "contingent punishment behavior," and "transactional leadership." Following this, we conducted an extensive search of the literature in organizational behavior to obtain as many published articles as possible that might contain correlations between leader reward and punishment behavior and subordinate criterion variables. In order to accomplish this, a manual search of each issue from 1971 through December 2003, of the major relevant academic journals (e.g., *Academy of Management Journal*, *Administrative Science Quarterly*, *Journal of Applied Psychology*, *Journal of Management*, *Organizational Behavior and Human Decision Processes*, *Personnel Psychology*, and *Leadership Quarterly*) was conducted. The year 1971 was chosen to begin the search because Rietz (1971) was among the first to investigate the relationship between leader reward and punishment behaviors and subordinate attitudes, perceptions, and

Table 2
Intercorrelations between leader reward and punishment behaviors and subordinate criterion variables

	Sample 1				Sample 2				Sample 3				Sample 4				Sample 5			
	CR	CP	NCR	NCP	CR	CP	NCR	NCP	CR	CP	NCR	NCP	CR	CP	NCR	NCP	CR	CP	NCR	NCP
Contingent reward																				
Contingent punishment	-.03				.18				.24				.14				.15			
Noncontingent reward	.47	-.11			.46	.03			.45	-.14			.31	.20			.57	.07		
Noncontingent punishment	-.49	.21	-.20		-.55	.05	-.16		-.57	-.07	-.29		-.24	.04	.07		-.43	-.04	-.23	
General job satisfaction	.28	.02	.22	-.19	.27	.02	.10	-.32	.31	.15	.20	-.31	.25	.14	.16	-.16	.58	.17	.36	-.45
Satisfaction with supervisor	.73	.03	.49	-.49	.72	.12	.31	-.59	.81	.20	.55	-.64	.39	.14	.33	-.27	.69	.14	.47	-.56
Satisfaction with coworkers	.33	.06	.18	-.23	.29	.14	.06	-.33	.33	.36	.12	-.26	.30	.27	.19	-.18	.41	.28	.30	-.32
Satisfaction with pay	.20	.07	.17	-.22	.30	-.02	.14	-.30	.26	.18	.15	-.26	.24	.11	.12	-.01	.26	.04	.32	-.31
Satisfaction with job security	.30	-.09	.30	-.30	.43	-.01	.19	-.33	.36	.11	.33	-.45	.36	.23	.24	-.15	.42	.29	.21	-.44
Growth satisfaction	.40	.01	.29	-.22	.36	.00	.13	-.29	.37	.17	.20	-.39	.20	.09	.10	-.14	.47	.21	.30	-.42
Distributive justice																				
Procedural justice																				
Interactional justice																				
Trust in supervisor																				
Perceived organ. support																				
Organizational commitment	.36	.09	.29	-.18	.42	.03	.16	-.36	.38	.20	.25	-.33	.34	.20	.23	-.10	.50	.21	.31	-.35
Affective commitment																				
Continuance commitment																				
Turnover intentions																				
Cynicism about change	-.35	-.03	-.23	.33	-.36	-.05	-.19	.36	-.31	-.13	-.06	.39	-.21	-.11	.04	.33	-.52	-.13	-.25	.42
Extra effort																				
Task performance	.47	-.14	.36	-.35	.32	-.02	.16	-.32	.30	-.11	.18	-.39	.30	-.11	.14	-.29				
Overall performance	.34	-.11	.30	-.29	.36	.03	.16	-.32	.23	-.13	.08	-.35	.31	.10	.07	-.33	.11	-.06	.15	.05
Altruism	.41	-.12	.36	-.42	.39	.13	.17	-.35	.29	-.05	.17	-.38	.32	.24	.12	-.36	.03	-.05	.02	.21
Courtesy	.30	-.14	.29	-.40	.39	.15	.13	-.31	.27	-.02	.17	-.36	.33	.12	.16	-.37	.14	-.01	.22	.04
Conscientiousness	.38	-.18	.32	-.36	.36	-.02	.18	-.31	.17	-.12	.09	-.32	.32	.08	.17	-.28				
Sportsmanship	.38	-.21	.22	-.41	.32	.08	.10	-.23	.27	-.06	.19	-.37	.39	-.03	.21	-.19	.12	.01	.15	-.05
Civic virtue	.11	.21	.00	-.19	.23	.03	.02	-.24	.13	-.06	.08	-.37	.26	.26	.22	-.32	.01	-.01	.00	.10

(continued on next page)

Note. CR, contingent reward; CP, contingent punishment; NCR, non-contingent reward; NCP, non-contingent punishment.

Table 2 (continued)

	Sample 6				Sample 7				Sample 8				Sample 9				Sample 10			
	CR	CP	NCR	NCP	CR	CP	NCR	NCP	CR	CP	NCR	NCP	CR	CP	NCR	NCP	CR	CP	NCR	NCP
Contingent reward																				
Contingent punishment													.35							
Noncontingent reward													.51	.09						
Noncontingent punishment	–.29				–.22				–.34				–.40	.06	–.18		–.53			
General job satisfaction	.34		–.34		.33			–.22	.36			–.44	.31	.08	.33	–.29	.37			–.28
Satisfaction with supervisor	.53		–.32		.54			–.26	.62			–.37	.59	.25	.47	–.50	.71			–.59
Satisfaction with coworkers	.09		–.06		.14			–.07	.38			–.29	.26	.15	.20	–.23	.29			–.13
Satisfaction with pay	–.01		–.05		.18			.00	.28			–.23	.32	.19	.24	–.11	.24			–.19
Satisfaction with job security	.19		–.20		.27			–.09	.36			–.23	.23	–.09	.28	–.28	.34			–.29
Growth satisfaction	.48		–.24		.52			–.26	.43			–.25	.41	.16	.35	–.19	.34			–.26
Distributive justice																				
Procedural justice																				
Interactional justice																				
Trust in supervisor	.60			–.40	.52			–.37	.45			–.25					.56			–.53
Perceived organ. support																				
Organizational commitment													.39	.19	.32	–.24				
Affective commitment																				
Continuance commitment																				
Turnover intentions																				
Cynicism about change	–.23			.18	–.25			.40	–.39			.45	–.42	–.22	–.23	.48	–.31			.43
Extra effort																				
Task performance	.34		–.06		.00			–.03	.26			–.12					.12			–.21
Overall performance	.26		–.03		–.07			–.21	.20			–.12	.34	.02	.15	–.30	.19			–.26
Altruism	.33		–.10		.04			–.20	.41			–.10	.32	.05	.06	–.09	.18			–.20
Courtesy	.22		–.20		.14			–.28	.40			–.14	.34	.02	.09	–.28	.25			–.25
Conscientiousness	.24		.03		–.01			–.26	.26			–.18					.19			–.17
Sportsmanship	.05		–.06		–.02			–.26	.32			.11	.19	–.02	–.01	–.43	.23			–.31
Civic virtue	.09		–.10		.16			–.32	.41			–.11	.17	.03	–.01	.07	.16			–.15

(continued on next page)

Table 2 (continued)

	Sample 11				Sample 12				Sample 13				Sample 14				Sample 15			
	CR	CP	NCR	NCP	CR	CP	NCR	NCP	CR	CP	NCR	NCP	CR	CP	NCR	NCP	CR	CP	NCR	NCP
Contingent reward																				
Contingent punishment	.32																			
Noncontingent reward	.52	.08																		
Noncontingent punishment	-.22	.04	-.06		-.39				-.29				-.11				-.37			
General job satisfaction	.24	.11	.14	-.26	.17			-.16	.18			.01	.25			.02	.23			-.36
Satisfaction with supervisor	.63	.21	.42	-.41																
Satisfaction with coworkers	.28	.22	.13	-.24																
Satisfaction with pay																				
Satisfaction with job security	.35	.11	.20	-.20																
Growth satisfaction	.39	.12	.24	-.25																
Distributive justice	.37	.08	.25	-.31																
Procedural justice	.56	.22	.36	-.31																
Interactional justice																				
Trust in supervisor	.61	.18	.40	-.42																
Perceived organ. support																				
Organizational commitment	.39	.17	.19	-.24																
Affective commitment																				
Continuance commitment																				
Turnover intentions	-.28	-.08	-.13	.23																
Cynicism about change	-.16	-.05	-.04	.30																
Extra effort	.16	-.08	.03	-.16	.09			-.07	.02			-.01	.00			-.06				
Task performance																				
Overall performance	.20	-.06	.09	-.21	.13			-.13	.02			-.05	.07			-.10	.15			-.06
Altruism	.20	.00	.03	-.13	.18			-.07	-.04			.03	.02			-.05	.16			-.14
Courtesy	.22	.01	.11	-.18	.24			-.19	.05			-.13	.03			-.05	.25			-.19
Conscientiousness																				
Sportsmanship	.23	.00	.14	-.19	.16			-.19	.07			-.06	-.07			-.12	.21			-.15
Sportsmanship	.23	.00	.14	-.19	.16			-.19	.07			-.06	-.07			-.12	.21			-.15
Civic virtue	.06	-.10	-.04	-.20																

(continued on next page)

performance in a field setting using questionnaire measures. Each journal was manually checked for studies reporting correlations between leader reward and punishment behavior and subordinate criterion variables, regardless of the article's main focus. Finally, we also examined all of the published articles included in the meta-analyses conducted by [Lowe et al. \(1996\)](#) and [Judge and Piccolo \(2004\)](#) of the transformational/transactional leadership literature. These articles were examined, because many of them included contingent reward and/or contingent punishment as measures of transactional leader behavior.

For a study to be included in the meta-analysis, it had to report a measure of leader reward and/or punishment behavior and a Pearson product-moment correlation coefficient between the leader reward and punishment behaviors and subordinate criterion variables. In addition, given that we were only interested in research conducted in actual organizations, we decided to exclude studies that had been conducted in experimental or simulation settings. These decision rules omitted articles that: (a) contained studies in which the contingent reward and punishment scales were combined into a single measure (e.g., [Greenberger, Strasser, & Lee, 1988](#); [Russ, McNeilly, & Comer, 1996](#)), (b) only reported the psychometric properties of the leader reward and punishment scales (e.g., [Schriesheim et al., 1991](#)) but not the correlations, and/or (c) contained only descriptive data (e.g., [Komives, 1991](#)). Our search yielded 77 studies that contained 98 independent samples that met these criteria. With the addition of the 20 samples from Study 1, a total of 78 studies containing 118 samples were available for our analysis.

Coding of relevant information

After the studies meeting the above criteria were identified from the literature, each study was reviewed and coded for the types of predictor and criterion variables, study characteristics (cross-sectional or longitudinal), sample characteristics, whether the leader behavior and criterion variable was obtained from the same or a different source, and whether the sample was conducted within one organization or across multiple organizational settings by at least two of the authors. The average inter-coder percentage of agreement across the study variables was 89%. Any discrepancies among the raters were discussed by three coders until consensus was reached for the final coding. The sample size of the study was recorded as the number of observations used to compute the correlation coefficient. The majority of studies included in this meta-analysis reported correlation coefficients at the individual subordinate level. In these cases, the sample size was recorded as the total number of subordinates in the study. However, in those studies where the average leadership score was reported,

the sample size recorded represented the total number of leaders in that study. Generally speaking, those studies that reported group level data for the leader focused on the relationship between these measures and unit or group-level variables (e.g., group performance). For those longitudinal studies that reported more than one wave of correlations between a leader reward and punishment behavior and a subordinate criterion variable, the average of the Time 1/Time 2 correlations were used for the cross-sectional component of the study so as not to “double” count the reported results. In addition, because we were also interested in the potential lagged effects of leader reward and punishment behavior on employee criterion variables, we also recorded the cross-lagged correlation coefficients from the longitudinal studies. Finally, when more than one study reported data from the same sample,¹ only correlations that were not reported in the study which appeared in the literature first were included in the data for the second study.

In addition to the association between the leader reward and punishment behaviors and the subordinate criterion variables, we also coded some potential moderator variables. [Stajkovic and Luthans \(1997\)](#) have noted that manufacturing firms differ from service firms both in terms of the definition and accurate assessment of performance outcomes, and in the nature of the task-performance and work processes involved in achieving these outcomes. Thus, we coded each sample in terms of whether it was primarily manufacturing or service oriented. Given the evidence suggesting that the relationships between leader behaviors and subordinate variables measured from the same source may differ from those obtained from different sources (cf. [Fuller, Patterson, Hester, & Stringer, 1996](#); [Judge & Piccolo, 2004](#); [Lowe et al., 1996](#)), we also coded whether the performance measures were obtained from the same or different sources. Finally, since [Ostroff and Harrison \(1999\)](#) have argued that it is important in meta-analytic studies to check for the biasing effects of mixing within-organization versus multiple-organization effect sizes, we coded whether the sample was obtained within one organizational setting or across different organizations.

Meta-analytic procedures

We used the meta-analytic procedures recommended by [Hunter and Schmidt \(1990\)](#) to calculate the true population correlations between leader reward and punishment behaviors and employee criterion variables.

¹ The data reported in [Waldman, Bass, and Yammarino \(1990\)](#) appears to use the same respondents as the book chapter by [Yammarino and Bass \(1990b\)](#) and an article by these same authors ([Yammarino & Bass, 1990a](#)); although the article reports multiple levels of analysis. Since the book chapter included more data than the articles, we used this chapter as the primary data source for our analysis.

To provide the most accurate estimates, the weighted mean correlations and their variances were corrected for measurement and sampling error. In addition, in those studies in which there were multiple indicators of a focal construct, we used linear composites of correlations. Linear composites are superior to averaging techniques because they provide a more construct valid estimate of the true correlation and avoid over- or underestimating the sampling error, thus improving the precision of meta-analysis. Further, linear composites are superior to the independent inclusion of all correlations because they do not double count the study in the data set, which systematically underestimates sampling error.

In addition to reporting estimates of the mean true score correlations, it is also important in meta-analysis to describe variability in the correlations. Accordingly, we report 80% credibility intervals and 90% confidence intervals around the estimated population correlations. Although some meta-analyses report only confidence intervals (e.g., Kosssek & Ozekio, 1998), whereas others report only credibility intervals (e.g., Vinchur, Schippmann, Switzer, & Roth, 1998), it is important to report both because each tells us different things about the nature of the correlations (Judge & Piccolo, 2004). Confidence intervals provide an estimate of the variability around the estimated mean correlation; a 90% confidence interval excluding zero indicates that we can be 95% confident that the average true correlation is non-zero (5% of average correlations would lie beyond the upper limit of the distribution). Credibility intervals provide an estimate of the variability of individual correlations across studies; a 80% credibility interval excluding zero indicates that 90% of the individual correlations in the meta-analysis excluded zero (for positive correlations, 10% are zero or less and 10% lie at or beyond the upper bound of the interval). Thus, confidence intervals estimate variability in the mean correlation, whereas

credibility intervals estimate variability in the individual correlations across the studies.

To determine whether the hypothesized differences in the relationships between leader *contingent* and *non-contingent* reward and punishment behaviors and the employee criterion variables were supported, we regressed each of the employee criterion variables of interest on the leader reward and punishment behaviors. This procedure allowed us to test for the effects of each of the leader behaviors on the criterion variables while holding the effects of the other leader behaviors constant.

Results

Relationships among the leader reward and punishment behaviors

Table 3 reports the summary of the meta-analytic results for the relationships among the leader contingent and non-contingent reward and punishment behaviors. These results suggest that the leader reward and punishment behaviors were relatively independent of each other. Indeed, with the exception of the relationship between contingent reward behavior and non-contingent punishment behavior ($\rho = -.55$), all of the remaining leader behaviors shared less than 8% of their variance. Thus, it appears that the leader reward and punishment behaviors exhibited adequate levels of discriminant validity.

Relationships between the leader behaviors and employee criterion variables

Employee perceptions of justice

Before turning our attention to the hypothesized differences in the relationships between contingent and

Table 3
Relationships among leader behaviors

		<i>k</i>	<i>N</i>	<i>M_r</i>	<i>SD_r</i>	<i>M_ρ</i>	<i>SD_ρ</i>	90% confidence interval	80% credibility interval	<i>Q</i>
Contingent rewards	Contingent punishments	40	13,429	.24	.13	.28	.15	.24 to .32	.09 to .47	252.71*
Contingent rewards	Noncontingent rewards	24	9,877	.21	.18	.26	.24	.19 to .33	-.05 to .57	340.05*
Contingent rewards	Noncontingent punishments	41	13,634	-.46	.13	-.55	.13	-.58 to -.52	-.72 to -.38	280.23*
Contingent punishments	Noncontingent rewards	24	9,904	-.17	.16	-.24	.21	-.31 to -.17	-.51 to .03	239.39*
Contingent punishments	Noncontingent punishments	26	10,097	.02	.14	.03	.17	-.03 to .07	-.19 to .25	179.58*
Noncontingent rewards	Noncontingent punishments	23	9,755	.00	.13	.00	.17	-.06 to .06	-.22 to .22	139.04*

Note. *k*, number of correlations. *N*, sample size. *M_r*, *n*-weighted mean correlation. *SD_r*, standard deviation of the *n*-weighted mean correlation. *M_ρ*, *n*-weighted mean population correlation. *SD_ρ*, standard deviation of the *n*-weighted mean correlation. A significant *Q*-statistic suggests that there is a significant amount of variance in the correlations across studies that is unaccounted for by study artifacts and measurement error.

* $p < .01$.

non-contingent reward and punishment behavior and employee criterion variables, we will briefly discuss the overall magnitudes of the relationships between the leader reward and punishment behaviors and these criterion variables shown in Table 4. As indicated in this table, leader contingent reward behavior had the strongest relationships with employees' perceptions of distributive, procedural and interactional justice (average $\rho = .61$), followed by non-contingent punishment behavior (average $\rho = .33$). When compared with the meta-analytic findings reported by Cohen-Charash and Spector (2001), which showed that the highest corrected correlation between organizational practices and employee justice perceptions in a field study was $\rho = .52$, the relationships between contingent reward behavior and these three forms of justice are quite impressive.

Role ambiguity

Contingent reward behavior had the strongest relationship with role ambiguity ($\rho = -.42$), followed by non-contingent punishment behavior ($\rho = .32$), contingent punishment behavior ($\rho = -.23$), and non-contingent reward behavior ($\rho = .09$). With the exception of non-contingent reward, the confidence intervals for relationships between these leader behaviors and role ambiguity all excluded 0.

Employee effort and performance

The results indicate that both leader contingent reward behavior and non-contingent punishment behavior are related with employee effort and in-role performance. In the case of employee effort, contingent reward behavior clearly had the strongest relationship ($\rho = .65$); although the negative relationship between employee effort and non-contingent punishment behavior ($\rho = -.13$) was also significant. The strength of the relationships between contingent reward behavior and employee task ($\rho = .28$), and overall in-role performance ($\rho = .22$) were virtually identical to those between non-contingent punishment behavior and these criterion variables (ρ 's = $-.27$ and $-.23$, respectively), but in the opposite direction as expected. In addition, non-contingent reward behavior was also found to be related to both of these criterion variables; although the strength of the relationships are substantially less (ρ 's = $.11$ in both cases).

Generally speaking, the strength and direction of the relationships between leader reward and punishment behaviors and employee extra-role performance (OCBs) were similar to the strengths of the relationships between these leader behaviors and employee task and overall performance. Indeed, with the exception of civic virtue: (1) the average corrected correlations between leader contingent reward behavior and leader non-contingent punishment behavior and the measures of citizenship behavior were $.24$ and $-.24$, respectively, (2) the average

correlation between leader non-contingent reward behavior and these criterion variables was $.13$, and (3) all of the relationships between these three leader behaviors and these aspects of employee citizenship behavior excluded zero.

Group/unit level performance

Interestingly, non-contingent punishment behavior had the strongest relationship with group/unit level performance ($\rho = -.34$), followed by contingent reward ($\rho = .24$) and contingent punishment behavior ($\rho = .21$). However, non-contingent reward behavior had virtually no relationship with this criterion variable ($\rho = -.05$). These findings are interesting because, when they are contrasted with the results for overall performance at the individual level they suggest that group performance was somewhat more sensitive to punishment than individual performance.

Employee attitudes and perceptions

With respect to employee satisfaction, the results reported in Table 4 indicate that leader contingent reward behavior generally had the strongest relationships with all of the facets of employee satisfaction (average $\rho = .42$), followed by non-contingent punishment behavior (average $\rho = -.34$), and non-contingent reward behavior (average $\rho = .13$) and contingent punishment behavior ($\rho = .13$). With the exception of the relationship between contingent punishment and satisfaction with job security, all of the relationships between contingent reward behavior, contingent punishment behavior and non-contingent punishment behavior and all of the facets of employee satisfaction excluded zero. However, this is not true for non-contingent reward behavior and the facets of satisfaction, where one quarter of the relationships (2 of 8) between the leader behavior and the facets of satisfaction included zero.

One relationship that deserves some additional attention is between leader contingent reward behavior and subordinates' satisfaction with their supervisor. The reason for this is that one of the studies that examined this relationship (Druskat, 1994) was conducted among a sample of approximately 6000 members of the clergy and therefore made up almost one-third of the sample size included in the meta-analysis. Because Huffcutt and Arthur's (1995) SAMD technique indicated that this sample was an outlier (SAMD = 55.2, $p < .01$), we removed Druskat's sample to determine what effect this had on the observed relationships, and found that the average corrected correlation with this study removed increased from $.55$ to $.72$, and the Q -statistic decreased from 3107.62 to 547.05. Thus, it appears that without this study, the corrected correlation between contingent reward behavior and subordinates' satisfaction with supervision is probably somewhat greater than when it is included in the meta-analysis.

Table 4

Relationships between leader reward and punishment behaviors and subordinate outcome variables

	Contingent reward behavior ^E									Noncontingent reward behavior ^E								
	<i>k</i>	<i>N</i>	<i>M_r</i>	<i>SD_r</i>	<i>M_ρ</i>	<i>SD_ρ</i>	90% confidence interval	80% credibility interval	<i>Q</i>	<i>k</i>	<i>N</i>	<i>M_r</i>	<i>SD_r</i>	<i>M_ρ</i>	<i>SD_ρ</i>	90% confidence interval	80% credibility interval	<i>Q</i>
E extra effort ^{E,L}	22	8131	.54	.29	.65	.32	.52 to .78	.24 to .99	1104.38**	—	—	—	—	—	—	—	—	—
E task performance ^L	17	6180	.26	.05	.28	.06	.25 to .31	.20 to .36	29.02*	8	4038	.09	.06	.11	.08	.05 to .17	.01 to .21	18.87**
E overall perf. ^L	50	9108	.20	.08	.22	.09	.19 to .25	.10 to .34	110.80**	13	2548	.08	.04	.11	.06	.07 to .15	.03 to .19	11.92
E altruism ^L	28	8104	.21	.07	.25	.08	.22 to .28	.15 to .35	71.21**	10	3377	.10	.05	.13	.07	.10 to .16	.04 to .22	14.13
E courtesy ^L	20	5591	.23	.05	.26	.06	.23 to .29	.18 to .34	34.41*	9	3072	.08	.05	.11	.07	.08 to .14	.02 to .20	11.70
E conscientiousness ^L	12	3916	.22	.04	.26	.05	.24 to .29	.20 to .32	14.07	7	2537	.10	.05	.14	.07	.09 to .19	.05 to .23	9.35
E sportsmanship ^L	24	7297	.21	.08	.24	.09	.21 to .27	.12 to .36	61.91**	9	3072	.09	.05	.12	.06	.08 to .16	.04 to .20	10.76
E civic virtue ^L	15	4921	.12	.04	.14	.06	.11 to .17	.06 to .22	19.35	9	3072	.03	.04	.04	.06	.02 to .08	-.04 to .12	9.33
E composite OCB ^L	3	554	.19	.12	.21	.13	.06 to .36	.04 to .38	4.92	—	—	—	—	—	—	—	—	—
Group/ performance ^L	19	1361	.21	.20	.24	.24	.15 to .33	-.07 to .55	133.79**	2	260	-.03	.12	-.05	.14	-.23 to .13	-.23 to .13	4.14*
General job sat. ^E	43	11461	.44	.15	.52	.16	.47 to .57	.31 to .73	472.17**	10	4089	.13	.07	.17	.10	.12 to .22	.04 to .30	24.78**
Sat. with work ^E	23	6510	.33	.06	.38	.07	.35 to .41	.29 to .47	52.96**	6	3051	-.06	.04	-.08	.06	-.12 to -.04	-.16 to .00	7.04
Sat. with super. ^E	52	19380	.47	.26	.55	.29	.47 to .63	.18 to .92	3107.62**	16	5881	.16	.20	.21	.27	.10 to .32	-.14 to .56	258.61**
Sat. w super. ^E (wo Druskat)	51	13432	.63	.13	.72	.14	.68 to .76	.54 to .90	547.05**	16	5881	.16	.20	.21	.27	.10 to .32	-.14 to .56	258.61**
Sat. with coworkers ^E	26	7019	.29	.05	.34	.07	.32 to .36	.25 to .43	42.14*	13	4889	.03	.09	.02	.14	-.21 to .25	-.16 to .20	54.01**
Sat. with pay ^E	24	5985	.21	.05	.25	.05	.22 to .28	.19 to .31	33.93	12	3918	.05	.09	.07	.12	.00 to .14	-.08 to .22	35.95**
Sat. with advance. opport. ^E	14	4320	.40	.05	.44	.06	.41 to .47	.36 to .52	26.81*	6	2713	.02	.04	.02	.06	-.01 to .05	-.06 to .10	6.15
Sat. with job security ^E	11	2280	.34	.05	.43	.06	.38 to .48	.35 to .51	11.71	7	1831	.23	.04	.33	.07	.28 to .38	.24 to .42	4.79
Growth sat. ^E	11	2298	.38	.05	.48	.05	.45 to .51	.42 to .54	13.43	7	1837	.22	.07	.32	.10	.27 to .37	.19 to .45	11.75
Distributive justice ^E	6	1856	.42	.04	.50	.04	.47 to .53	.45 to .55	4.73	—	—	—	—	—	—	—	—	—
Procedural justice ^E	6	1856	.48	.08	.56	.14	.49 to .63	.38 to .74	18.86**	—	—	—	—	—	—	—	—	—
Interactional justice ^E	2	672	.68	.05	.76	.05	.73 to .79	.70 to .82	0.22	—	—	—	—	—	—	—	—	—
Trust in supervisor ^E	12	4192	.59	.12	.67	.12	.59 to .75	.52 to .82	147.44**	—	—	—	—	—	—	—	—	—
Perceived organ. support ^E	3	1296	.49	.05	.54	.05	.51 to .57	.48 to .60	2.31	—	—	—	—	—	—	—	—	—
Organizational commit. ^E	29	10431	.38	.07	.43	.09	.41 to .46	.31 to .55	111.05**	15	6263	.05	.12	.06	.16	-.01 to .13	-.15 to .27	98.37**
Affective commit. ^E	3	1297	.39	.04	.46	.05	.39 to .53	.40 to .52	0.75	—	—	—	—	—	—	—	—	—
Continuance commit. ^E	3	1293	-.09	.05	-.11	.06	-.17 to -.05	-.19 to -.03	0.50	—	—	—	—	—	—	—	—	—
Turnover intentions ^E	5	3277	-.26	.04	-.32	.06	-.35 to -.29	-.40 to -.24	6.42	—	—	—	—	—	—	—	—	—
Role ambiguity ^E	25	7940	-.36	.08	-.42	.08	-.45 to -.39	-.52 to -.32	85.03**	10	4460	.03	.07	.04	.09	-.02 to .10	-.08 to .16	24.70**
Cynicism about change ^E	14	3573	-.31	.09	-.37	.08	-.42 to -.32	-.47 to -.27	43.37**	7	1831	-.12	.08	-.17	.12	-.26 to -.08	-.32 to -.02	18.11**
Leader effectiveness ^{E,L}	26	4418	.42	.18	.51	.21	.43 to .59	.24 to .78	210.92**	—	—	—	—	—	—	—	—	—

(continued on next page)

Note. *k*, number of correlations. *N*, sample size. *M_r*, *n*-weighted mean correlation. *SD_r*, standard deviation of the *n*-weighted mean correlation. *M_ρ*, *n*-weighted mean population correlation. *SD_ρ*, standard deviation of the *n*-weighted mean correlation. To help determine where method variance may have had an effect on the observed relationships, the superscript (E) indicates that the measure was obtained from employees, and the superscript (L) indicates that the measure was obtained from leaders. Therefore, method variance may have biased the relationships in those cases where both the leader behavior and the criterion variables were obtained from the same source. A significant *Q*-statistic suggests that there is a significant amount of variance in the correlations across studies that is unaccounted for by study artifacts and measurement error.

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

Table 4 (continued)

	Contingent punishment behavior ^E									Noncontingent punishment behavior ^E								
	<i>k</i>	<i>N</i>	<i>M_r</i>	<i>SD_r</i>	<i>M_ρ</i>	<i>SD_ρ</i>	90% confidence interval	80% credibility interval	<i>Q</i>	<i>k</i>	<i>N</i>	<i>M_r</i>	<i>SD_r</i>	<i>M_ρ</i>	<i>SD_ρ</i>	90% confidence interval	80% credibility interval	<i>Q</i>
E extra effort ^{E,L}	—	—	—	—	—	—	—	—	—	4	1240	-.11	.06	-.13	.08	-.19 to -.07	-.23 to -.03	4.00
E task performance ^L	8	4038	-.03	.03	-.04	.04	-.07 to -.01	-.09 to .01	7.60	16	5874	-.23	.03	-.27	.04	-.30 to -.25	-.32 to -.22	18.38
E overall perf. ^L	30	5567	-.06	.05	-.06	.06	-.09 to -.04	-.14 to .02	40.60	24	4388	-.19	.09	-.23	.10	-.28 to -.18	-.36 to -.10	60.62**
E altruism ^L	11	3854	.03	.10	.04	.12	-.04 to .11	-.11 to .19	41.97**	24	6355	-.17	.08	-.21	.10	-.25 to -.17	-.34 to -.08	64.81**
E courtesy ^L	9	3092	.01	.05	.01	.06	-.02 to .04	-.07 to .09	13.00	19	4603	-.19	.07	-.24	.08	-.28 to -.20	-.34 to -.14	37.45**
E conscientiousness ^L	7	2537	-.02	.09	-.02	.12	-.11 to .07	-.17 to .13	22.87**	11	2928	-.20	.08	-.26	.10	-.33 to -.19	-.39 to -.13	27.32**
E sportsmanship ^L	10	3549	.00	.08	.01	.10	-.06 to .08	-.12 to .14	39.70**	22	5832	-.19	.06	-.24	.08	-.28 to -.20	-.34 to -.14	43.70**
E civic virtue ^L	10	3549	-.02	.07	-.03	.09	-.08 to .02	-.15 to .09	22.04**	13	3456	-.13	.09	-.17	.13	-.24 to -.10	-.34 to .00	39.49**
E composite OCB ^L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Group performance ^L	3	316	.17	.18	.21	.21	-.02 to .44	-.06 to .48	18.39	3	316	-.27	.06	-.34	.07	-.39 to -.29	-.43 to -.25	1.01
General job sat. ^E	19	5897	.10	.07	.12	.09	.08 to .16	.00 to .24	46.51**	23	7130	-.30	.11	-.39	.13	-.44 to -.34	-.56 to -.22	118.35**
Sati. with work ^E	23	6510	.08	.10	.10	.13	.06 to .14	-.07 to .27	81.27**	6	3051	-.21	.04	-.26	.05	-.30 to -.22	-.32 to -.20	7.86
Sat. with super. ^E	29	9088	.14	.12	.17	.14	.12 to .22	-.01 to .35	150.39**	24	7286	-.53	.09	-.65	.08	-.68 to -.62	-.75 to -.55	107.69**
Sat with coworkers ^E	22	6559	.15	.08	.19	.10	.15 to .23	.06 to .32	57.38**	17	5346	-.24	.06	-.30	.08	-.34 to -.26	-.40 to -.20	34.69**
Sat. with pay ^E	20	5525	.04	.04	.06	.05	.02 to .10	.00 to .12	25.86	16	4376	-.18	.05	-.23	.06	-.26 to -.21	-.31 to -.15	24.72
Sat. with advance. opport. ^E	14	4320	.12	.09	.15	.11	.09 to .21	.01 to .29	43.61**	6	2713	-.18	.07	-.22	.09	-.29 to -.15	-.34 to -.10	14.22*
Sat. with job security ^E	7	1831	.07	.12	.09	.15	-.02 to .20	-.10 to .28	24.46**	11	2285	-.27	.07	-.35	.09	-.41 to -.29	-.47 to -.23	22.10*
Growth sat. ^E	7	1837	.10	.06	.13	.07	.06 to .20	.04 to .22	8.34	11	2298	-.26	.05	-.33	.05	-.37 to -.29	-.39 to -.27	11.91
Distributive justice ^E	—	—	—	—	—	—	—	—	—	3	1299	-.22	.13	-.28	.18	-.45 to -.11	-.51 to -.05	13.80**
Procedural justice ^E	—	—	—	—	—	—	—	—	—	3	1299	-.20	.15	-.25	.18	-.44 to -.07	-.48 to -.02	16.73**
Interactional justice ^E	—	—	—	—	—	—	—	—	—	2	672	-.40	.08	-.47	.10	-.54 to -.40	-.60 to -.34	1.13
Trust in supervisor ^E	2	1106	.28	.19	.33	.16	.07 to .59	.12 to .54	17.35**	8	2381	-.34	.09	-.42	.11	-.50 to -.34	-.56 to -.28	28.43**
Perceived organ. support ^E	—	—	—	—	—	—	—	—	—	3	1296	-.20	.11	-.23	.13	-.37 to -.09	-.40 to -.06	9.63**
Organizational commit. ^E	21	7992	.16	.07	.19	.08	.15 to .23	.09 to .29	57.87**	16	6474	-.25	.05	-.30	.06	-.33 to -.27	-.38 to -.22	30.59**
Affective commitment	—	—	—	—	—	—	—	—	—	3	1297	-.18	.08	-.22	.10	-.28 to -.16	-.35 to -.09	4.96
Continuance commit. ^E	—	—	—	—	—	—	—	—	—	3	1293	.14	.06	.18	.08	.12 to .24	.08 to .28	1.43
Turnover intentions ^E	—	—	—	—	—	—	—	—	—	4	1917	.24	.04	.31	.05	.27 to .35	.25 to .37	1.89
Role ambiguity ^E	24	7935	-.18	.16	-.23	.18	-.29 to -.17	-.46 to .00	214.17**	11	4768	.25	.09	.32	.11	.25 to .39	.18 to .46	46.69**
Cynicism about change ^E	7	1831	-.08	.05	-.10	.06	-.15 to -.05	-.18 to -.02	6.04	14	3572	.33	.05	.40	.06	.37 to .43	.32 to .48	21.80
Leader effectiveness ^{E,L}	5	885	.15	.11	.16	.18	.03 to .29	-.07 to .39	16.11**	3	768	-.35	.18	-.39	.20	-.60 to -.18	-.65 to -.13	17.59**

Although contingent reward behavior had the strongest relationship with employees' trust in their supervisor ($\rho = .67$), both non-contingent punishment behavior ($\rho = -.42$), and contingent punishment behavior ($\rho = .33$), were also fairly strongly related to this criterion variable. Taken together, these findings suggest that leader reward and punishment behavior influence employees' trust in their supervisors.

In addition to the effects of reward and punishment behavior on job satisfaction and trust, the results show that contingent reward, non-contingent reward, contingent punishment, non-contingent punishment behavior were related to overall organizational commitment (ρ 's = .43, .06, .19, and $-.30$, respectively). Contingent reward and non-contingent punishment behavior were also related to affective commitment (ρ 's = .46 and $-.22$, respectively), continuance commitment (ρ 's = $-.11$ and $.18$, respectively), perceived organizational support (ρ 's = $.54$ and $-.23$), and turnover intentions (ρ 's = $-.32$ and $.31$, respectively). With the exception of the relationship between non-contingent reward and overall organizational commitment, none of the confidence intervals for these relationships included zero.

Employee cynicism about change

Generally speaking, contingent reward behavior, non-contingent reward behavior, and contingent punishment behavior were all negatively related to employee cynicism about change (ρ 's = $-.37$, $-.17$, and $-.10$, respectively), while non-contingent punishment was positively related to this criterion variable ($\rho = .40$), and all of these relationships excluded zero.

Unique effects of the leader behaviors and hypothesized differences between them

Table 5 reports the unique effects of the contingent and non-contingent leader reward and punishment behaviors on the criterion variables, and the tests of the hypothesized differences between them. The first four numerical columns of this table report the standardized parameter estimates of the effects of the leader behaviors on each of the criterion variables. Thus, these coefficients represent the unique effects of each leader behavior on the criterion variable controlling for the effects of the other leader behaviors. It is important to control for the effects of the other leader behaviors when testing the hypotheses, because the leader behaviors are correlated to some extent. The fifth column is the percentage of variance in the criterion variable accounted for by the leader behaviors. The last four indicate the nature of each hypothesis being tested and whether it was supported or not. A "yes" in these columns indicates that the difference in the coefficients was in the expected direction, and the asterisk(s) indicate whether the difference was significant (either $p < .05$; $p < .01$). A "no" in these columns indicates that the difference was in the

opposite direction from that hypothesized, and the asterisk(s) indicate whether the non-hypothesized difference was significant or not. In addition, there were some hypothesized differences that could not be tested due to insufficient data. These are indicated in the table by dashes (—). Although this generally was not a problem for testing hypotheses H2–H6, the lack of data in the literature prevented us from testing H1.

With respect to the unique effects of the leader behaviors, Table 5 shows that, generally speaking, contingent reward behavior had a stronger relationship with employee perceptions of justice (average $\beta = .61$), than non-contingent punishment behavior (average $\beta = .05$); and the average amount of variance accounted for in the justice perceptions by the combination of these two leader behaviors is 38%.

Contingent reward behavior also had the strongest effect ($\beta = -.34$) on role ambiguity, followed by non-contingent punishment behavior ($\beta = .14$), contingent punishment behavior ($\beta = -.12$), and non-contingent reward behavior ($\beta = .10$). Together, these leader behaviors accounted for 22% of the variance in employee perceptions of role ambiguity.

The effects of the leader behaviors on employee performance are fairly similar, with the exception of the effects on employee extra effort. Generally speaking, the effects of contingent reward behavior (average $\beta = .15$) and non-contingent punishment behavior (average $\beta = -.15$) on employee performance were similar in magnitude and stronger than the effects of non-contingent reward behavior (average $\beta = .06$) and contingent punishment behavior (average $\beta = .02$). Together, these leader behaviors accounted for about 8% of the variance. However, the pattern of effects on extra effort was somewhat different. Contingent reward behavior had a much stronger impact on employee extra effort ($\beta = .83$) than non-contingent punishment behavior ($\beta = -.33$), and together these leader behaviors accounted for 50% of the variance in this criterion variable. The difference in effects of the leader behaviors on this criterion variable may be due to the fact that data were not available to examine the impact of non-contingent reward and contingent punishment behavior on this criterion variable. The difference in the percent of variance accounted for may be due to the fact that the majority of the studies that have included extra effort obtained the measure of this criterion variable from the same source as the leader behaviors, whereas the studies that have focused on other aspects of employee performance did not obtain the measures of performance from the same source as the measures of leader behavior.

In contrast to the findings for individual levels of performance, leader reward behaviors had virtually no effects on group level measures of performance. Indeed, as indicated in Table 5, only leader non-contingent punishment behavior ($\beta = -.36$) and leader contingent punishment

Table 5

Completely standardized parameter estimates for leader reward and punishment behaviors and employee criterion variables and summary of support for hypothesized relationships

Outcome variable	CR behavior	NCR behavior	CP behavior	NCP behavior	R ²	Hypothesis	Hypothesized relationship	Hypothesis supported?	Hypothesized relationship	Hypothesis supported?
Distributive justice	.50	—	—	-.01 (ns)	.25	H1	CR (+) > NCR	—	CP (+) > NCP	—
Procedural justice	.61	—	—	.08	.32	H1	CR (+) > NCR	—	CP (+) > NCP	—
Interactional justice	.72	—	—	.08	.58	H1	CR (+) > NCR	—	CP (+) > NCP	—
Role ambiguity	-.34	.10	-.12	.14	.22	H2	CR (-) > NCR	Yes**	CP (-) > NCP	Yes**
Employee extra effort	.83	—	—	-.33	.50	H3	CR (+) > NCR	—	CP (+) > NCP	—
Employee task performance	.21	.03	-.09	-.15	.11	H3	CR (+) > NCR	Yes**	CP (+) > NCP	Yes*
Employee overall performance	.15	.05	-.09	-.14	.08	H3	CR (+) > NCR	Yes*	CP (+) > NCP	Yes
Employee altruism	.14	.10	.03	-.13	.08	H3	CR (+) > NCR	Yes	CP (-) > NCP	Yes**
Employee courtesy	.17	.06	.02 (ns)	-.15	.09	H3	CR (+) > NCR	Yes**	CP (+) > NCP	Yes**
Employee conscientiousness	.15	.09	-.03	-.18	.10	H3	CR (+) > NCR	Yes	CP (+) > NCP	Yes**
Employee sportsmanship	.12	.09	.03	-.17	.08	H3	CR (+) > NCR	Yes	CP (+) > NCP	Yes**
Employee civic virtue	.09	.01 (ns)	-.05	-.12	.03	H3	CR (+) > NCR	Yes*	CP (+) > NCP	Yes*
Group/unit level performance	-.03 (ns)	.01 (ns)	.23	-.36	.16	H4	CR (+) > NCR	No	CP (+) > NCP	Yes**
Trust in supervisor	.56	—	.17	-.11	.48	H5a	CR (+) > NCR	—	CP (+) > NCP	Yes**
General job satisfaction	.40	.08	.03	-.17	.29	H5b	CR (+) > NCR	Yes**	CP (+) > NCP	Yes**
Satisfaction with work	.45	-.22	.08	-.01 (ns)	.18	H5b	CR (+) > NCR	Yes**	CP (+) > NCP	Yes**
Satisfaction with supervision	.01	.27	.25	-.65	.53	H5b	CR (+) > NCR	No**	CP (+) > NCP	Yes**
Satisfaction with coworkers	.19	.01 (ns)	.15	-.20	.15	H5b	CR (+) > NCR	Yes**	CP (+) > NCP	Yes**
Satisfaction with pay	.15	.04	.03 (ns)	-.15	.08	H5b	CR (+) > NCR	Yes**	CP (+) > NCP	Yes**
Sat.wth advancement opport.	.51	-.12	-.02 (ns)	.06	.21	H5b	CR (+) > NCR	Yes**	CP (+) > NCP	No**
Satisfaction with job security	.17	.32	.13	-.26	.28	H5b	CR (+) > NCR	No**	CP (+) > NCP	Yes**
Growth satisfaction	.27	.28	.13	-.19	.30	H5b	CR (+) > NCR	No	CP (+) > NCP	Yes**
Organizational commitment	.34	-.01 (ns)	.10	-.12	.20	H5c	CR (+) > NCR	Yes**	CP (+) > NCP	Yes**
Affective commitment	.49	—	—	.05 (ns)	.21	H5c	CR (+) > NCR	—	CP (+) > NCP	—
Continuance commitment	-.02 (ns)	—	—	.17	.03	H5c	CR (+) > NCR	—	CP (+) > NCP	—
Perceived organ. support	.59	—	—	.10	.30	H5d	CR (+) > NCR	—	CP (+) > NCP	—
Turnover intentions	-.21	—	—	.19	.13	H5e	CR (-) > NCR	—	CP (-) > NCP	—
Cynicism about change	-.44	-.05	.01 (ns)	-.14	.16	H6	CR (-) > NCR	Yes**	CP (-) > NCP	Yes**

Note. CR, contingent reward; NCR, non-contingent reward; CP, contingent punishment; NCP, non-contingent punishment. Sample sizes vary across relationships, as shown in Table 4. All coefficients are significant, except those indicated by ns. Dashes (—) indicate that there was not enough data about the leader behavior to include it in the analysis.

* $p < .05$.

** $p < .01$.

behavior ($\beta = .23$) were significant predictors of group level performance, although their effects were in the opposite direction. Together, these leader behaviors accounted for 16% of the variance in this criterion variable.

With respect to employee attitudes and perceptions, generally speaking contingent reward behavior had the strongest effects on these criterion variables (average $\beta = .31$), followed by punishment (average $\beta = .11$), non-contingent punishment (average $\beta = -.09$), and non-contingent reward (average $\beta = .07$). However, it is important to note that the pattern varied somewhat across this set of criterion measures. Together, the leader behaviors accounted for an average of 24% of the variance in these criterion variables.

Finally, contingent reward behavior was the strongest predictor of employees' cynicism about organizational change ($\beta = -.44$), followed by noncontingent punishment behavior ($\beta = -.14$); and the combination of leader reward and punishment behaviors included in this research accounted for 16% of the variance in this criterion variable.

With respect to the hypothesized differences, an examination of the results reported in Table 5 indicates that for leader reward behavior, 15 of the 19 hypothesized differences were in the expected direction, and 12 of these differences were significant. Thus, in general, fairly strong support for the hypothesized differences in the effectiveness of contingent and non-contingent leader reward behavior were found. The nonsignificant effects that were in the expected direction involved three forms of OCB (altruism, conscientiousness and sportsmanship). Of the four differences that were in the opposite direction, only two were significant. Contrary to expectations, contingent reward behavior had a significantly ($p < .01$) weaker effect on satisfaction with supervisor and satisfaction with job security than non-contingent reward behavior.

An even stronger pattern of results is found for leader punishment behavior. Nineteen out of 20 hypothesized differences were in the expected direction, and 18 of these differences were significant. Thus, with only a couple of exceptions, the findings strongly supported all of the hypotheses. Only one difference was in the expected direction, but was not significant. The coefficient for the effect of contingent punishment on overall performance was more positive than the effect of non-contingent punishment, but the difference was not significant. Only one difference was significant in the opposite direction. Contrary to expectations, the coefficient for the effect of contingent punishment on satisfaction with opportunities for advancement was significantly less positive than the effect of non-contingent punishment.

Test of moderating effects

The *Q*-statistics reported in Table 4 indicate that although some of the relationships summarized between

leader reward and punishment behaviors and employee criterion variables were relatively invariant, the majority of them (70 of 100, or 70%) varied across samples. This suggests that moderators of these relationships are likely. Therefore, in the final stage of our analysis, we examined the potential moderating effects of three factors: (a) the independence of the data sources, (b) the type of sample, and (c) whether the correlation coefficients came from a single organization or multiple organizations by performing separate analyses for all of the appropriate relationships. The results of our analyses of the first two moderators (independence of data sources and type of sample) are reported in Table 6. As indicated in this table, we tested for the effects of the independence of the data sources by examining differences in the nature of the relationships between leader contingent reward and punishment behaviors and employee overall performance. Although our original intent was to make these comparisons with other measures of performance (e.g., task performance and OCBs), there were not enough studies reported in the literature in which these criterion variables were measured from the same source. Thus, only overall performance was used for these comparisons.

Table 6 indicates that the relationship between leader contingent reward behavior and employee performance was higher ($\rho = .27$) when the measure of overall performance was obtained from the same source as the leader behavior ratings, than when the performance measure is obtained from a different source ($\rho = .21$); and that the relationship between leader contingent punishment behavior and this criterion variable was more positive ($\rho = .06$) when the measures came from the same source, than when they were obtained from different sources ($\rho = -.09$). Although the difference for the leader contingent reward-performance relationship is only marginally significant since the 95% confidence intervals overlapped slightly (.18 to .24 when the measures were obtained from a different source versus .23 to .31 when the measures were obtained from a different source), when taken together with the findings for contingent punishment they were generally consistent with other meta-analyses in the leadership domain (cf. Fuller et al., 1996; Gerstner & Day, 1997; Judge & Piccolo, 2004; Lowe et al., 1996) that indicate that same-source biases tend to inflate the relationships between leadership behaviors and employee criterion variables somewhat.

The second moderator we examined in our analysis was the type of sample used in the study. Given the large number of criterion variables examined in this study, and the fact that many of them were only included in a few samples, we decided to limit our analysis to those that were included in a fairly substantial number of samples. These criterion variables included: employee overall performance, general satisfaction, organizational commitment and role ambiguity.

Table 6
Moderators of the leader reward and punishment behavior—criterion variable relationships

Relationship	Moderator	<i>k</i>	<i>N</i>	<i>M_r</i>	<i>SD_r</i>	<i>M_ρ</i>	<i>SD_ρ</i>	90% confidence interval	80% credibility interval	<i>Q</i>
<i>Independence of data sources</i>										
Contingent reward—overall employee perf.	Different source	46	7830	.19	.08	.21	.01	.18 to .24	.20 to .22	107.62***
	Same source	4	1278	.25	.00	.27	.00	.23 to .31	.27 to .27	2.66
Contingent punishment—overall employee perf.	Different source	28	4771	−.07	.02	−.09	.02	−.11 to −.07	−.12 to −.06	29.14
	Same source	2	796	.05	.00	.06	.00	−.01 to .13	.06 to .06	1.82
<i>Type of sample</i>										
Contingent reward—overall employee perf.	Manufacturing	24	4623	.18	.07	.20	.08	.17 to .23	.10 to .30	48.96**
	Service	23	3889	.22	.09	.24	.10	.20 to .28	.11 to .37	63.53***
Contingent reward—general satisfaction	Manufacturing	22	5179	.33	.09	.42	.10	.36 to .48	.29 to .55	61.85***
	Service	14	4034	.54	.12	.62	.16	.55 to .69	.41 to .83	156.52***
Contingent reward—organizational commitment	Manufacturing	15	4117	.40	.00	.47	.00	.45 to .50	.47 to .47	13.32
	Service	11	4695	.38	.09	.43	.10	.37 to .49	.30 to .56	68.60***
Contingent reward—role ambiguity	Manufacturing	9	2387	−.29	.08	−.35	.08	−.41 to −.29	−.45 to −.25	22.83**
	Service	15	4318	−.39	.06	−.44	.06	−.48 to −.40	−.52 to −.36	33.38**
Contingent punishment—overall employee perf.	Manufacturing	12	2579	−.04	.00	−.05	.00	−.08 to −.02	−.05 to −.05	8.99
	Service	17	2927	−.07	.07	−.07	.08	−.11 to −.03	−.17 to .03	32.42**
Contingent punishment—general satisfaction	Manufacturing	9	2137	.07	.02	.09	.04	.05 to .13	.04 to .14	10.62
	Service	9	2525	.10	.09	.11	.12	.03 to .19	−.04 to .26	35.41***
Contingent punishment—organ. commitment	Manufacturing	14	3906	.14	.08	.18	.10	.12 to .24	.05 to .31	40.56***
	Service	6	2851	.18	.05	.21	.06	.14 to .28	.13 to .29	15.04*
Contingent punishment—role ambiguity	Manufacturing	9	2387	−.04	.15	−.05	.19	−.18 to .08	−.29 to .19	68.94***
	Service	14	4313	−.24	.11	−.29	.13	−.36 to −.22	−.46 to −.12	66.41***
Noncontingent reward—overall performance	Manufacturing	9	1609	.11	.05	.14	.00	.09 to .19	.14 to .14	3.92
	Service	4	939	.04	.00	.05	.00	−.02 to .12	.05 to .05	2.40
Noncontingent reward—general satisfaction	Manufacturing	7	1831	.18	.05	.28	.07	.23 to .33	.19 to .37	11.96
	Service	2	1023	.09	.00	.11	.00	.04 to .18	.11 to .11	1.41
Noncontingent reward—organ.commitment	Manufacturing	9	2306	.19	.07	.24	.11	.18 to .31	.10 to .38	25.60**
	Service	5	2722	−.04	.04	−.05	.05	−.08 to −.02	−.11 to .01	9.89*
Noncontingent reward—role ambiguity	Manufacturing	2	481	.07	.00	.10	.00	−.01 to .21	.10 to .10	0.57
	Service	7	2744	.04	.07	.05	.09	−.02 to .13	−.07 to .17	21.24**
Noncontingent punishment—overall perf.	Manufacturing	19	3141	−.19	.08	−.23	.09	−.28 to −.18	−.35 to −.11	39.00**
	Service	5	1247	−.20	.10	−.24	.12	−.35 to −.13	−.39 to −.09	18.16**
Noncontingent punishment—general satisfaction	Manufacturing	2	1023	−.42	.00	−.50	.00	−.54 to −.46	−.50 to −.50	0.38
	Service	20	4872	−.25	.09	−.32	.11	−.36 to −.28	−.46 to −.18	60.60***
Noncontingent punishment—organ. commitment	Manufacturing	9	2306	−.25	.04	−.31	.05	−.34 to −.28	−.37 to −.25	13.07
	Service	6	2933	−.26	.05	−.31	.06	−.36 to −.26	−.39 to −.23	13.38*
Noncontingent punishment—role ambiguity	Manufacturing	2	481	.24	.00	.31	.00	.22 to .40	.31 to .31	0.17
	Service	8	3052	.27	.10	.34	.12	.22 to .42	.19 to .49	42.02***

Note. *k*, number of correlations. *N*, sample size. *M_r*, *n*-weighted mean correlation. *SD_r*, standard deviation of the *n*-weighted mean correlation. *M_ρ*, *n*-weighted mean population correlation. *SD_ρ*, standard deviation of the *n*-weighted mean correlation. A significant *Q*-statistic suggests that there is a significant amount of variance in the correlations across studies that is unaccounted for by study artifacts and measurement error.

* *p* < .05.

** *p* < .01.

*** *p* < .001.

As indicated in Table 6, the majority of relationships examined were not moderated by the nature of the samples used in the study. Indeed, many of the parameter estimates for the relationships examined in Table 6 were strikingly similar across the manufacturing and service samples. However, there were a few exceptions. For example, the evidence in this table suggests that there was a somewhat stronger positive relationship between contingent reward behavior and employee satisfaction in service firms ($\rho = .62$) than in manufacturing firms ($\rho = .42$), and a somewhat stronger negative relationship between leader contingent punishment behavior and employee perceptions of role ambiguity in service firms ($\rho = -.29$) than in manufacturing firms ($\rho = -.05$). In contrast, the data suggests that the positive relationship between leader non-contingent reward behavior and employee satisfaction and organizational commitment was somewhat stronger in manufacturing firms (ρ 's = .28 and .24, respectively) than in service firms (ρ 's = .11 and $-.05$, respectively), and that the negative relationship between leader non-contingent punishment behavior and employee satisfaction was somewhat stronger in manufacturing firms ($\rho = -.50$) than it was in service firms ($\rho = -.32$). Although many of the differences in these relationships were only marginally significant, taken together, they may suggest that the attitudes and perceptions of employees in service environments tended to be more strongly related to contingent forms of leader reward and punishment behaviors whereas the attitudes and perceptions of employees in manufacturing environments tended to be more strongly related to non-contingent forms of these behaviors.

The final moderator examined in our analysis was whether the correlation coefficients obtained from sam-

ples from a single organizational setting differed from those obtained from multiple organizations. Ostroff and Harrison (1999) have argued that it is important to examine the potential bias produced by mixing single and multi-organization samples. However, in our study, it was only possible to make this comparison for 28 of the relationships between leader reward and punishment behaviors and employee criterion variables. The results indicated that although there were some differences in the strengths of these relationships across sample types, there was no clear pattern to these differences. Thus, no conclusions could be drawn about whether the heterogeneity of the sample affects the magnitude of the correlations.

Longitudinal relationships between reward and punishment behaviors and the criterion variables

A final step in our analysis was to examine the time lagged relationships between leader reward and punishment behaviors and employee criterion variables. This is important because it provided somewhat stronger evidence of the causal priorities among the variables of interest in this research (albeit still not as strong as experimental evidence). Unfortunately, because of the relatively small number of longitudinal studies available in the literature, it was only possible to examine time lags between two of the leader behaviors (contingent reward and contingent punishment) and three employee criterion variables (task performance, absenteeism, and satisfaction). The results of our analyses of the cross-lagged correlations are reported in Table 7.

Interestingly, the findings suggest that: (a) contingent reward and punishment behaviors were more likely to be

Table 7

Longitudinal relationships between contingent reward and punishment behaviors and employee criterion variables

Relationship	<i>k</i>	<i>N</i>	<i>M_r</i>	<i>SD_r</i>	<i>M_p</i>	<i>SD_p</i>	90% confidence interval	80% credibility interval	<i>Q</i>
Contingent reward → Performance	8	839	.30	.17	.33	.18	.27 to .39	.09 to .57	40.76**
Performance → Contingent reward	7	522	.19	.00	.21	.00	.13 to .29	.21 to .21	2.00
Contingent reward → Absenteeism	5	380	-.14	.00	-.16	.00	-.25 to -.07	-.16 to -.16	.01
Absenteeism → Contingent reward	5	380	-.30	.05	-.33	.06	-.42 to -.23	-.37 to -.23	5.93
Contingent reward → Satisfaction	7	641	.45	.00	.51	.00	.46 to .56	.51 to .51	3.57
Satisfaction → Contingent reward	7	641	.25	.03	.28	.06	.21 to .35	.22 to .28	7.47
Contingent punishment → Performance	7	522	-.04	.00	-.05	.00	-.13 to .03	-.05 to -.05	4.32
Performance → Contingent punishment	6	449	-.36	.15	-.39	.16	-.52 to -.26	-.60 to -.18	18.86*
Contingent punishment → Absenteeism	5	380	-.02	.03	-.02	.04	-.11 to .07	-.07 to .03	5.55
Absenteeism → Contingent punishment	5	380	.43	.00	.47	.00	.39 to .55	.47 to .47	.93
Contingent punishment → Satisfaction	7	641	-.31	.13	-.36	.12	-.48 to -.24	-.52 to -.20	16.93*
Satisfaction → Contingent punishment	7	641	-.10	.00	-.11	.00	-.19 to -.03	-.11 to -.11	2.21

Note. *k*, number of correlations. *N*, sample size. *M_r*, *n*-weighted mean correlation. *SD_r*, standard deviation of the *n*-weighted mean correlation. *M_p*, *n*-weighted mean population correlation. *SD_p*, standard deviation of the *n*-weighted mean correlation. A significant *Q*-statistic suggests that there is a significant amount of variance in the correlations across studies that is unaccounted for by study artifacts and measurement error.

* $p < .01$.

** $p < .001$.

a cause of employee satisfaction ($\rho = .51$ and $\rho = -.36$, respectively) than a consequence of it ($\rho = .28$ and $\rho = -.11$, respectively); (b) contingent reward and punishment behaviors were more likely to be a consequence of employee absenteeism ($\rho = -.33$ and $\rho = .47$, respectively) than a cause of it ($\rho = -.16$ and $\rho = -.02$, respectively); and (c) contingent reward was more likely to be a cause than a consequence of employee performance ($\rho = .33$ versus $\rho = .21$), whereas contingent punishment behavior was more likely to be a consequence than a cause of employee performance ($\rho = -.39$ versus $\rho = -.05$). This pattern of findings is interesting (although only suggestive), because it indicates that these two key leader behaviors are both shapers of employees' attitudes and behaviors, and reactions to them.

General discussion

Several conclusions are warranted from the pattern of results obtained in our study. First, the results of Table 5 suggest that leader reward and punishment behaviors have significant relationships with many of the employee attitudes, perceptions and behaviors considered important in the field, even after controlling for the effects of the other leader behaviors. Although some of the strong relationships obtained between the measures of leader reward and punishment behaviors and employee attitudes and perceptions are undoubtedly influenced by method biases (cf. Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff & Organ, 1986), the fact that leader contingent reward behavior and leader non-contingent punishment behavior were also found to share an average of 8% of the variance with a variety of different employee performance measures (e.g., task performance, overall performance, organizational citizenship behaviors), which were generally obtained from different sources, suggests that method variance cannot explain all of these relationships.

Second, consistent with the predictions of the fairly traditional path-goal and reinforcement approaches to leadership, as well as the more recent transformational and transactional approaches, the results indicated that the manner in which leaders administer rewards and punishments is a critical determinant of the effectiveness of these leader behaviors. More specifically, the findings reported in Table 5 indicate that for reward behavior 15 of the 19 hypothesized differences are in the expected direction, and 12 of these differences are significant, and for punishment behavior 19 of the 20 hypothesized differences are in the expected direction and 18 of these differences are significant. These are fairly compelling findings, and suggest that leaders need to be aware of the fact that the real key to providing praise and commendations to employees on the one hand, and reprimands and

social disapproval to them on the other hand, is whether these events are administered contingently upon employee performance. In addition, these findings also suggest that leaders need to communicate to employees those specific behaviors that they feel merit their (the leader's) praise and social approval.

Finally, consistent with hypotheses H1 and H2, the findings reported in Table 5 also indicate that leader reward and punishment behaviors are strongly related to employees' perceptions of justice and role ambiguity. These findings suggest that perceptions of justice and role ambiguity may be mediators of the effects of leader reward and punishment behaviors on employee attitudes and behaviors, because previous research (e.g., Cohen-Charash & Spector, 2001; Colquitt et al., 2001; Jackson and Schuler, 1985) has found that justice perceptions and role ambiguity influence many of the employee attitudes and behaviors included in our meta-analysis (e.g., satisfaction, commitment, trust, task performance, and organizational citizenship behaviors). Of these two potential mediating effects, justice appears to be more strongly related to the leader reward and punishment behaviors. Unfortunately, this mediating effect could not be tested directly in our study because, to our knowledge, only one study has reported correlations among all of these variables. This suggests that examining the mediating effects of justice ought to be one of the priorities for future research.

Implications for future research

Along with the points made above, we believe that there are several additional avenues that are in need of future research. One potentially useful direction for future research relates to leader contingent punishment behavior. Generally speaking, we found positive relationships in this study between leader contingent punishment behavior and employee attitudes and perceptions, but not between this form of leadership behavior and employee performance. These findings suggest that even though leaders who use punishment appropriately generally enhance employee attitudes and perceptions, these attitudes and perceptions do not necessarily translate into improved levels of performance. One possible reason for this may have to do with the fact that the administration of punishment is more complex than the administration of rewards. For example, although rewards that are administered contingently signal the behavior that the leader considers desirable, punishments that are administered contingently only signal the behavior that the leader considers undesirable, but do not necessarily identify those behaviors that the leader expects the employee to exhibit to be effective in the situation. For this reason, it may be necessary for leaders who use punishment contingently not only to identify

the behaviors that they consider ineffective, but also to identify those specific behaviors that the employee should perform to be effective. Such behaviors on the part of the leader, which may be called leader punishment clarification behaviors, should therefore be included in future research in this domain.

The finding that contingent and non-contingent punishment had somewhat stronger effects on group performance as opposed to individual performance also warrants further attention. Although it is not clear why punishment should have stronger effects on the performance of groups than on individuals, O'Reilly and Puffer (1989) have suggested that this may result from the social context in which punishment is administered:

While it may be true that negative sanctions may be less effective than positive sanctions in controlling individual behavior, management occurs in a social context. The provision of rewards or punishments to an individual are often observed and responded to by others. As Oliver (1980) has pointed out, positive and negative sanctions have different effects when used to induce collective action. The cost of providing positive incentives may increase when administered to an increasing number of subjects while the cost of selective sanctions may decrease. This impact is heightened as others learn what is important and desirable through simple observation of what is rewarded and what is punished....Properly applied, negative sanctions may act both to set specific goals and to help establish group norms which govern acceptable and unacceptable behaviors. Failure to use negative sanctions may, from a social perspective, act as a reinforcer for undesired behaviors, lead to feelings of inequity and establish unproductive norms. While positive sanctions may be more effective in shaping an individual's behavior than negative sanctions, in a social context the use of negative sanctions may be a highly visible and effective tool for increasing both productivity and satisfaction. (O'Reilly & Puffer, 1989, p. 42).

Similar points regarding the importance of the social context in which punishment occurs have also been made by Trevino (1992). Building on the work of O'Reilly and Puffer (1989), she argues that although most of the research on punishment has focused on the effects it has on the recipient of it, punishment is a social event that also has effects on those who observe it being administered to others. Using a justice framework, Trevino develops a series of hypotheses regarding the effects of punishment administered by organizational leaders will have on observers of the punishment events.

Consistent with the expectations of O'Reilly and Puffer (1989) and Trevino (1992), several studies have reported that punishment does, indeed, influence the behavior of those who observe the punishment event. For example, O'Reilly and Puffer (1989) found that subjects in their studies reported that they were more willing

to work hard, felt more satisfied, expected higher levels of group performance, and perceived more equitable treatment from their supervisors when the supervisors punished a team member who performed poorly than when the poor performing team member received no punishment. Also consistent with these expectations, Niehoff, Paul, and Bunch (1998) found that observers tended to perceive a violator to be more deserving of punishment when he/she had a history of poor performance than when he/she did not, and tended to express more positive attitudes toward the supervisor when the consequences the supervisor administered were more as opposed to less severe. These findings are important, because coworkers are likely to pay particular attention to those instances when one of their peers is punished. However, it is fair to say that many, if not most, of the hypotheses developed by Trevino (1992) have not been tested yet. Thus, future research on the effects that punishment has within a group or social context might be particularly worthwhile to pursue.

Related to the above, the fact that non-contingent punishment had so many detrimental effects on so many criterion variables suggests that future research should focus on enhancing our understanding of the causes of this dysfunctional behavior and the reasons why it is so detrimental. One reason leaders may engage in this behavior is to show their employees who the boss is and thereby assert their authority; or it is possible that when managers become frustrated with their jobs, they may react disproportionately to minor examples of poor performance. Such instances of punishment will be perceived to be retributively unjust (Trevino, 1992), either because the punishment is not linked to their performance or because it is disproportionate to their behavior. This will be de-motivating for employees and send the wrong social signals. Therefore, managers need to understand how damaging non-contingent punishment behavior can be and control their desires to exert their authority or to vent their frustrations. However, another possibility is that leaders who are perceived to use a lot of non-contingent punishment are really administering punishments contingent upon performance, but they have failed to communicate the criteria they use to judge performance or how employees measure up to those expectations. In these instances, what the leader needs to change is not the manner in which punishments are administered, but rather he/she needs to do a better job of communicating his or her expectations to employees. To the extent that the leader succeeds in doing this, this should enhance employees' perceptions of justice, reduce role-ambiguity and produce a variety of beneficial effects for the organization.

In addition to gaining a better understanding of the effects of non-contingent punishment, we also need to gain a better understanding of the situations in which contingent punishment behaviors have their biggest

effects. The results of this meta-analysis showed that contingent punishment behavior reduced role ambiguity more in service firms than in manufacturing firms. One reason that this may have happened is that it is possible that service jobs are inherently more complex and ambiguous than manufacturing jobs because often they must be shaped to meet customer needs or situational contingencies. This may suggest that contingent punishment behavior will be most beneficial in work settings where role ambiguity is high. This would be a good topic for future research to examine.

Given that leader reward and punishment behaviors did have significant relationships with many of the most important employee criterion variables in the field, future research should also be directed at the antecedents of these behaviors. Although reviews of the determinants of a leader's use of rewards and punishments have been reported previously by Podsakoff (1982) and Arvey and Jones (1985), both of these reviews are over twenty years old, and it is fair to say that substantially less attention has been directed at the determinants of leader reward and punishment behaviors than at their consequences during the past two decades. However, a few exceptions to this general rule do exist. For example, using a qualitative interview technique, Butterfield, Trevino, and Ball (1996) identified several sources that influence a manager's decision about whether and how to administer punishment, including: (a) the manager's expectations, implicit theories, and attributions about the subordinate's behavior; (b) the subordinate's own expectations, past work history, and relationship with the manager; (c) the expectations of the work group; and (d) the organization's expectations and policies regarding the use of punishment. Using a more traditional quantitative approach, Atwater, Dionne, Cambobeco, Avolio, and Lau (1998), examined three attributes of military cadet leaders (i.e., their physical fitness, moral reasoning and self-esteem) that might influence their use of contingent and non-contingent punishment behaviors. They found that leaders who possessed high levels of physical fitness and moral reasoning were more likely to use contingent punishment, whereas those with lower levels of self-esteem were more likely to use non-contingent punishment. However, despite these interesting findings, little follow-up research has been conducted to determine their generalizability, or to examine other factors that influence a leader's use of reward and punishment behaviors.

Finally, an important area for future research would be to examine the direction of the causal relationships between contingent and non-contingent leader reward and punishment behaviors and employee criterion variables in greater detail. The findings summarized in Table 7 suggest that the relationships between leader reward and punishment behavior and employee criterion variables may be complex. Based on the corrected cross-

lagged meta-analytic correlations, our results indicate that the same leader behavior can be a cause of some employee criterion variables, and a consequence of others. This suggests the need for not only more empirical research, but for more careful theorizing about the conditions under which these behaviors are likely to be drivers of employee criterion variables and when they are likely to be driven by them. To our knowledge, this is the only meta-analysis to ever examine this issue.

However, even better evidence of causality could be obtained from controlled experiments. Although cross-lagged correlations are better evidence of causality than cross-sectional correlations, they are not as good as experimental data. The few experimental studies that have been reported (cf. Jung & Avolio, 2000; Manz & Sims, 1986) are promising, and suggest that leader reward and punishment behaviors are causal determinants of important employee criterion variables. For example, in an experimental study designed to examine the effects of transformational and transactional leadership on the performance in a brain storming task, Jung and Avolio (2000) reported that leader contingent reward behavior directly increased subordinates' quality of performance, and indirectly increased both subordinate quality and satisfaction through its effect on the subordinates' trust in their leader.

In another interesting experimental study designed to examine the effects of modeling on leadership behavior and employee attitudes, Manz and Sims (1986) reported that participants exposed to a leader who modeled contingent reward behavior provided more contingent positive feedback to subordinates, who subsequently expressed more satisfaction; whereas participants exposed to a leader who modeled contingent punishment behavior provided more negative feedback to subordinates and less positive feedback and goal setting behavior. These results are interesting, because they suggest that leaders can learn how to use rewards and punishments more effectively by observing models of the behavior. However, it is fair to say that additional research needs to be conducted to in laboratory settings to establish the causal effects of leader reward and punishment behaviors on many of the criterion variables included in our meta-analysis.

Limitations

There are, of course, some limitations of our research that should be recognized. First, as noted by several researchers (e.g., Guzzo, Jackson, & Katzell, 1987; Wanous et al., 2000), every meta-analytic study is subject to a variety of judgment calls that may influence the results. Thus, even though we took every precaution (e.g., by having multiple raters code the data and resolve their differences with a third rater) to minimize the

impact of these judgments, our decisions may have nevertheless had some influence on the findings. Second, many of the variables included in our review were obtained with self-report measures that are subject to same-source biases (cf. Podsakoff et al., 2003; Podsakoff & Organ, 1986). Indeed, although the number of comparisons that could be made were small in number, our own moderator analyses suggested that the relationships between the leader behaviors and employee criterion variables that were obtained from the same source tended to be stronger than these same relationships when they were obtained from different sources. Despite this, it is important to recognize that the relationships between leader contingent reward behavior and leader non-contingent punishment behavior and employee task performance and organizational citizenship behaviors (e.g., altruism, courtesy, conscientiousness, sportsmanship, and civic virtue), which were obtained from different sources, were also fairly substantial. Third, although the data reported in Table 3 indicate that the leader reward and punishment behaviors included in our meta-analysis are relatively independent from each other, leader contingent reward behavior and leader non-contingent punishment behavior were somewhat more highly correlated than the rest (corrected $r = -.55$). This suggests that the correlations shown in Table 4 capture both unique and shared variance between the leader behaviors and the criterion measures. However, it is important to note that this potential limitation of the correlational data in Table 4 is addressed directly by the regression results reported in Table 5, which show that these two leader behaviors had significant independent effects on most of the criterion variables, even after controlling for all of the other leader behaviors included in our analysis. A final limitation that may restrict the generalizability of the findings is that manufacturing organizations may be over-represented in the meta-analysis, because virtually all of the samples obtained for Study 1 were from different manufacturing organizations. However, the fact that the moderator analysis indicated that organizational type (service versus manufacturing) did not have much of an impact on the relationships reported in our study would suggest that this may not be a substantial concern.

Conclusion

In spite of these limitations, the findings of our meta-analysis suggest that leader reward and punishment behaviors have significant unique effects on a variety of important employee attitudes, perceptions and behaviors, and that the manner in which leaders administer rewards and punishments is a critical determinant of the effectiveness of these leader behaviors. In addition, perceptions of justice and role ambiguity were identified as

potentially important mediators of the effects of these leader behaviors on employee criterion variables. Generally speaking, the results confirm the importance of leader reward and punishment behaviors and the central role they have been given in theories of leadership, and suggest several new avenues for future research.

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Asterisks (*) indicate those papers included in the meta-analysis

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