

FOSTERING EMPLOYEE PRO-
ENVIRONMENTAL BEHAVIOR:
THE IMPACT OF LEADERSHIP AND MOTIVATION

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Fostering Employee Proenvironmental Behavior:

The Impact of Leadership and Motivation

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The environmental sustainability pressures facing organizations have increased greatly over the past three decades. In response to these pressures, organizations have implemented a variety of programs and practices to diminish their environmental impact. These initiatives have included the adoption of all-encompassing environmental management systems (i.e., total quality environmental management, ISO 14001), as well as specific initiatives such as green purchasing, eco-design, recycling, telecommuting, and energy conservation.

The success of corporate environmental initiatives depends, not just on environmental management systems and technological innovations, but also on the willingness of individual employees to engage in the proenvironmental behaviors (PEBs) that preserve or restore the quality of the natural environment (Boiral, 2009; Daily, Bishop, & Govindarajulu, 2009; Jabbour, & Santos, 2008). Although environmental management programs (e.g., ISO 14001) recognize the critical role of employees and require the participation of employees at all organizational levels, the mechanisms that foster the proenvironmental behaviors of individual employees are not well-understood (Boiral, 2009; Daily et al., 2009). Research on corporate environmental sustainability has focused primarily on organizations rather than individual employees. The fields of organizational behavior and organizational psychology, which typically examine individual-level behavior at work, have rarely focused on environmental issues. Seeking to increase understanding of PEBs at work, we offer a theoretical framework of the processes that facilitate such behavior at the employee level. The framework is intended to guide research and, ultimately, inform organizational practice.

The framework focuses on the impact of leadership and employee motivation on employee PEBs. The corporate sustainability literature has often noted the importance of leadership for effective environmental management (e.g., Egri & Herman, 2000; Ramus & Steger, 2000). In considering the impact of leadership on the employee's PEBs, we focus specifically on the role of the employee's immediate manager. Although the environmental leadership provided by top management is important (e.g., Banerjee, Kyer, & Kashyap, 2003), the employee's immediate manager is an important representative of the organization (Eisenberger, Huntington, Hutchison, & Sowa, 1986), and is likely to have a critical impact on his/her environmental attitudes and behaviors (Anderson, Shivarajan & Blau, 2005; Daily et al., 2009; Ramus & Steger, 2000).

We look to advances in leadership theory, specifically work on transformational leadership (i.e., Bass, 1985), in developing our framework. We also introduce self-determination theory (Deci & Ryan, 1985, 2000; Ryan & Deci, 2000), a theory of human motivation and growth in social contexts, as a lens to understand employee motivation to participate in organizational environmental programs. Other scholars (i.e., Bono and Judge, 2003) have found these theories to be extremely useful in explaining employee performance in organizations. We believe that the nexus of these two theories provides significant insight into employees' PEBs.

In this chapter, we briefly describe transformational leadership theory and self-determination theory and discuss their application to PEBs at work. We then integrate the two theories in our framework of employee proenvironmental behavior, presenting research propositions that might be tested in future research. We also offer implications for research and practice.

Theoretical Background

Transformational Leadership Theory

During recent years, transformational leadership theory (e.g., Bass, 1985; Bass, Avolio, & Atwater, 1996) has received a great deal of attention in the leadership literature (Judge & Piccolo, 2004). Corporate environmental sustainability scholars have suggested that the theory is valuable for understanding leadership of environmental initiatives (e.g., Del Brío, Junquera, & Ordiz, 2008; Egri & Herman, 2000; Fernandez, Junquera, & Ordiz, 2006; Portugal & Yukl, 1994).

Transformational leadership theory (i.e., Bass, 1985; Bass et al., 1996) distinguishes three unique, but not mutually exclusive, types of leadership: transformational, transactional, and laissez-faire (Judge & Piccolo, 2004). *Transformational leaders* create superior results and positive change in organizations. They motivate followers to do more than might be normally expected by encouraging them to transcend their own self-interests for the good of the group or organization, setting exceptionally high standards of performance, and developing subordinates to their full potential (Bass, 1985; Powell & Graves, 2003). Transformational leaders are proactive rather than reactive; they seek new opportunities and ways of working, and challenge the status quo (Bass, 1985; Lowe, Kroeck, & Sivasubramaniam, 1996).

Transformational leadership includes four dimensions: idealized influence or charisma, inspirational motivation, intellectual stimulation, and individualized consideration (Bass, 1985). *Idealized influence* is the extent to which leaders display attributes and behaviors that cause followers to view them as role models. Leaders who have high idealized influence display a sense of power and confidence, act in ways that build subordinates' respect, communicate their key values, and stress the importance of having a sense of purpose (Bass, 1985; Bass et al., 1996; Powell & Graves, 2003). *Inspirational motivation* is the degree to which the leader inspires a high level of motivation through activities such as articulating a compelling vision of the future and talking enthusiastically about what needs to be done. *Intellectual stimulation* involves getting followers to question basic assumptions and consider problems and tasks from new angles. *Individualized consideration* entails focusing on the development and mentoring of the each individual employee.

Purely *transactional leaders* operate within existing organizational systems and culture and maintain the status quo (Bass, 1985; Lowe et al., 1996). The relationship between the transactional leader and the employees can be conceptualized as an exchange of resources (e.g., employees receive money or rewards in return for task accomplishment) (Bass, 1985; Judge & Piccolo, 2004). Transactional leadership includes three dimensions: contingent reward, active management by exception, and passive management by exception. Leaders who display *contingent reward* promise and provide appropriate rewards to employees who meet assigned objectives (Bass, 1985; Bass et al., 1996; Powell & Graves, 2003). In *active management by exception* and *passive management by exception*, the leader acts to avoid or correct a performance problem. In the *active* form of the behavior, the manager actively monitors the employee's behavior and takes action before serious problems occur. In the *passive* form of the behavior, the manager intervenes after a performance problem has occurred.

By itself, transactional leadership is presumed to result in average, rather than exceptional, performance. However, transactional leadership is not antithetical to transformational leadership. In fact, transformational leadership is not likely to be effective when transactional leadership is totally lacking (Bass, 1985; Lowe et al., 1996).

Laissez-faire leadership is distinct from both transformational and transactional leadership; it is sometimes called non-leadership. Laissez-faire leaders avoid taking responsibility, fail to give direction or make decisions, and ignore the development of followers (Bass, 1985; Bass et al., 1996). The theory assumes that laissez-faire behaviors are ineffective.

A substantial body of evidence provides support for transformational leadership theory. A recent meta-analysis (Judge & Piccolo, 2004) suggests that transformational behaviors are strongly and consistently positively related to leadership criteria such as follower job satisfaction, follower satisfaction with leader, follower motivation, and leader effectiveness. One of the transactional behaviors, contingent reward, also is strongly positively related to leadership criteria. The effects of the remaining factors (active management by exception, passive management by exception, laissez-faire) are weaker and less reliable. However, passive management by exception and laissez-faire leadership appear to be negatively related to indicators of leader effectiveness. Overall, these findings indicate that transformational leadership, in addition to contingent reward, yields positive results.

Transformational leadership theory provides an appealing framework for conceptualizing environmental leadership (Egri & Herman, 2000). Enhancing corporate environmental performance is likely to involve substantial changes in employee behavior; the values-based, inspirational nature of transformational leadership may be particularly effective in stimulating these changes (Brío et al., 2008; Egri & Herman, 2000; Fernández et al., 2006). In fact, Egri & Herman (2000) noted that case studies often describe environmental leaders in terms (e.g., visionary, inspirational) consistent with transformational leadership. Although transactional leadership has received less attention in the sustainability literature, its task focus may also be useful in ensuring that employees meet environmental objectives (Egri & Herman, 2000). To facilitate the application of the transformational leadership theory to environmental leadership, we provide descriptions of transformational, transactional, and laissez-faire leadership as they might apply to environmental initiatives. Table 1 provides examples of leader behaviors for each of the three types of leadership.

Insert Table 1 about here

We would expect leaders who exhibit transformational leadership on environmental issues to be proactive in articulating a compelling vision of an environmentally sustainable future. They will create movement toward that vision by modeling environmentally conscious values and behaviors, raising employees' motivation to achieve environmental goals, developing employees' capacity to achieve these goals, and providing new ways of approaching environmental issues.

As shown in Table 1, a transformational manager might provide idealized influence by sharing his/her environmental values, talking about the importance of environmental sustainability, or considering sustainability issues when making decisions. Inspirational motivation might include providing a vivid picture of a sustainable future, talking about what the organization and employees must do to create this future, and expressing confidence that they are all “up to the task.” Managers might provide individualized consideration by assessing each employee’s capacity to address environmental issues and providing appropriate coaching and development opportunities. Intellectual stimulation might include exposing employees to new perspectives on environmental issues or encouraging employees to generate a variety of ideas for solving problems.

Transactional leadership on environmental issues will encompass assigning responsibility for environmental goals and tasks, monitoring performance, and administering rewards and punishments (Bass, 1985; Egri & Hermann, 2000). As shown in Table 1, contingent reward behaviors might include communicating environmental goals and tasks, and determining and administering rewards for goal achievement. Managers who engage in active management by exception would actively monitor for environmental mistakes and departures from environmental standards, and intervene at the first sign of problems. Passive management by exception would involve intervening only when serious or chronic environmental problems occur.

Laissez-faire leadership behaviors signify a lack of interest in sustainability. Managers who display such behaviors might avoid involvement in sustainability initiatives; they are unlikely to make decisions on environmental issues or respond to questions about environmental problems.

Self-Determination Theory

Self-determination theory focuses on the maximization of human potential. It suggests that individuals have innate tendencies toward psychological growth and integration, and seek to develop a coherent identity or sense of self (Deci & Ryan, 1985, 2000; Ryan & Deci, 2000, 2002). SDT suggests that the type of motivation possessed by employees, not just the amount, is a critical determinant of employee performance (Bono & Judge, 2003; Gagné & Deci, 2005). The theory identifies several different types of motivation that underlie or regulate goal-directed behaviors. These different types of motivation represent individuals’ perceptions of their reasons for acting – the why of behavior (Deci & Ryan, 2000; Gagné & Deci, 2005; Sheldon & Elliott, 1998, 1999). They fall into two broad categories, autonomous and controlled motivation. Autonomous and controlled motivation differ in the extent to which they are integrated or consistent with the individual’s sense of self.

Autonomous motivation involves pursuing actions that are consistent or concordant with the underlying self; actions emerge from the individual’s deep values, goals, and interests, and are experienced as voluntary (Deci & Ryan, 2000; Gagné & Deci, 2005; Judge, Bono, Erez, & Locke, 2005; Sheldon & Elliot 1998, 1999). It includes *identified motivation* (i.e., pursuing an activity because it is consistent with one’s values and goals) and *intrinsic motivation* (i.e., pursuing an activity because it is inherently interesting or pleasurable) (Sheldon & Elliot, 1998).

In contrast, *controlled motivation* is less likely to be self-integrated or derived from underlying values and interests. Individuals' actions result from a sense of pressure; they believe they must act (Deci & Ryan, 2000; Gagné & Deci, 2005; Judge et al., 2005; Sheldon & Elliot, 1998, 1999). Controlled motivation includes *extrinsic motivation* (i.e., pursuing an activity because of external contingencies such as pay, approval, or punishment) and *introjected motivation* (i.e., pursuing an activity to comply with inner "shoulds," to feel good about oneself, to maintain or enhance one's ego). Introjected motivation occurs when individuals partially internalize or "take in" others' expectations (Gagné & Deci, 2005). They feel that they should engage in the prescribed behavior, but do not truly "own" or value the behaviors. For instance, individuals with introjected motivation may partially internalize external messages about the benefits of exercise. They may feel that they *should* exercise and feel guilty when they do not exercise. However, they may fail to embrace the need for exercise as a deeply-held personal value.

SDT suggests that autonomous motivation is generally associated with enhanced performance compared to controlled motivation (Deci & Ryan, 2000; Gagné & Deci, 2005). The self-integrated nature of identified and intrinsic motivation is presumed to lead to feelings of engagement and genuineness, which, in turn, boost task persistence and performance (Bono & Judge, 2003; Gagné & Deci, 2005; Judge et al., 2005; Ryan & Deci, 2001). In contrast, activities that are associated with controlled motivation may be viewed as "shoulds" rather than a matter of free choice, thereby creating feelings of tension and pressure that interfere with performance. Over the long run, individuals are less likely to persist with activities that stem from controlled motivation (Judge et al., 2005; Sheldon & Elliot, 1998, 1999).

Environmental psychologists have used the SDT concepts of intrinsic, identified, introjected, and extrinsic motivation to understand individuals' reasons for proenvironmental behavior in residential and school settings (e.g., Osbaldiston & Sheldon, 2003; Pelletier, 2002; Pelletier, Tuson, Green-Demers, Noels, & Beaton, 1998). We use these concepts to understand employees' motives for proenvironmental behavior at work.

Table 2 provides descriptions of autonomous and controlled motivation as they might apply to PEBs at work. It should be noted that the different types of motivation are not mutually exclusive; an employee's PEBs may stem from one or more of the motives. As shown in the table, autonomous motivation to engage in PEBs may stem from the employee's interests or values. Employees who are motivated by intrinsic motivation engage in proenvironmental behaviors because they experience PEBs as personally interesting or fun. For instance, an individual might enjoy the challenge of redesigning a product, service, or process to reduce its impact on the environment. When identified motivation occurs, employees engage in PEBs because these behaviors are consistent with their personal values and goals. They are committed to environmental sustainability; proenvironmental behaviors reflect their personal identities.

Insert Table 2 about here

Controlled motivation stems from external or internal pressure to engage in PEBs. As shown in Table 2, employees who are motivated by extrinsic motivation engage in PEBs to comply with external demands such as job requirements, or to obtain rewards or avoid sanctions. Employees who are motivated by introjected motivation have partially internalized the proenvironmental messages sent by their managers, organizations, or other sources. They believe that “good employees” engage in proenvironmental behaviors and that they should perform PEBs. They have not embraced environmental sustainability as a deeply held value, but perform PEBs to maintain their self-images and avoid the bad feelings (e.g., guilt) they would experience if they did not perform the behaviors.

Framework

Our framework, shown in Figure 1, integrates concepts from transformational leadership theory and self-determination theory to understand employees’ proenvironmental behaviors. Employees’ PEBs encompass a broad set of environmentally conscious activities including following established environmental rules, performing required environmental tasks, recycling, reusing, conserving energy, learning more about the environment, finding more environmentally-friendly ways of working, developing and applying ideas for reducing the company’s environmental impact, developing green processes and products, questioning practices that hurt the environment, and encouraging others to consider the environment. As shown in Figure 1, employees’ PEBs may differ in the degree to which they are cognitively simple or complex (Gagné & Deci, 2005), arduous or easy (Pelletier, 2002), and required or voluntary (Boiral, 2009).

Insert Figure 1 about here

Our framework suggests that leaders’ environmental behaviors impact employees’ motives for engaging PEBs, which, in turn, influence their PEBs. It also acknowledges that leader behaviors may directly affect employees’ PEBs. For instance, transformational leadership on environmental issues may result in improvements in employees’ skills or ideas that directly facilitate the performance of PEBs (Ramus & Killmer, 2007; Ramus & Steger, 2000). The discussion below focuses on the indirect effects of leader behaviors on PEBs through motives. This focus allows us to explore the underlying processes by which leader behaviors impact employees’ PEBs.

Effects of Leadership Behaviors on Motives

As noted above, we propose that transformational, transactional, and laissez-faire leadership behaviors influence employees’ motives to engage in PEBs. Sustainability scholars have posited that transformational leadership, and perhaps some aspects of transactional leadership, influence participation in environmental initiatives (Egri & Hermann, 2000). We believe that the effects of leader behaviors on PEBs occur, at least partially, through employees’ motives. This notion is based on SDT literature on the influence of the social context on autonomous and controlled motivation (e.g., Gagné & Deci, 2005; Van den Broeck,

Vansteenkiste, & De Witte, 2008). It also mirrors recent leadership research (i.e., Bono & Judge, 2003) suggesting that employees' motives for work activities mediate the effects of transformational leadership behaviors on employee performance.

SDT highlights the effects of the social context on autonomous and controlled motivation (Gagné & Deci, 2005; Ryan & Deci, 2000; Van den Broeck et al., 2008). It suggests that autonomous motivation is enhanced in a supportive context that allows employees to experience three psychological states (Deci & Ryan, 2000; Gagné & Deci, 2005). The three states are 1) a sense of autonomy or volition where employees view their actions as a matter of personal choice, 2) a sense of competence characterized by feelings of personal effectiveness, and 3) a sense of relatedness, or close connection with and acceptance by others.

A supportive context that allows the employee to experience feelings of autonomy, competence, and relatedness validates the employee's true or authentic self, and facilitates the pursuit of self-congruent, autonomous actions (Gagné & Deci, 2005; Van den Broeck et al., 2008). In contrast, a controlling, pressure-laden or rejecting environment interferes with the employee's sense of autonomy, competence, and relatedness (Van den Broeck et al., 2008). The employee's underlying self is not supported in a controlling environment. The employee is likely to feel vulnerable, making it difficult to engage in autonomous, self-congruent actions and increasing the likelihood that he/she will comply with external "shoulds" (extrinsic motivation) or inner demands (introjected motivation).

Although numerous contextual factors (e.g., organizational climate, leader behaviors, reward contingencies) are presumed to influence the presence of the three psychological states, leader behaviors appear to be particularly critical (Baard, Deci, & Ryan, 2004; Gagné & Deci, 2005; Van den Broeck et al., 2008). Transformational leadership may be especially important in creating feelings of autonomy, competence, and relatedness. Researchers have linked transformational leadership to increases in employee outcomes such as task-related self-confidence, and identification with and commitment to the organization (Avolio, Zhu, Koh, & Bhatia, 2004; Walumbwa, Avolio, & Zhu, 2008), outcomes that overlap somewhat with the three psychological states defined by SDT. We believe that transformational leadership on environmental issues may facilitate the psychological states of autonomy, competence, and relatedness needed for autonomous motivation of PEBs (Bono & Judge, 2003; Shamir, House, & Arthur, 1993).

When a transformational leader talks about the importance of protecting nature, presents an inspiring vision of a sustainable future, and talks enthusiastically and confidently about what needs to be done, employees are likely to internalize these messages and begin to personally "own" the organization's proenvironmental values and goals (Bono & Judge, 2003; Daily et al., 2009; Egri & Herman, 2000; Walumbwa et al., 2008). This sense of personal ownership should lead employees to view PEBs as an expression of the self, creating a sense of autonomy or personal volition.

Moreover, the transformational leader's enthusiasm for and confidence about environmental goals, fresh perspectives on environmental problems, and efforts to develop each employee's capacity to address environmental issues are likely to enhance the extent to which

employees feel competent to address environmental problems (Avolio et al., 2004; Walumbwa et al., 2008). Also, the leader's status as a role model on environmental issues and individualized efforts to develop employees' capacities to address environmental issues will facilitate employees' sense of connection to the leader, thereby creating feelings of relatedness.

The sense of autonomy, competence, and relatedness provided by transformational leadership on environmental behaviors should provide a supportive context that allows employees to pursue environmental activities that derive from their interests, values, and goals, thereby facilitating autonomous motivation. Moreover, the self-validation provided by transformational leadership should limit the need for controlled motivation; employees who feel that their interests are accepted should have little need to seek self- or other-approval by complying with inner (introjected motivation) or external demands (extrinsic motivation). Thus, we posit:

Proposition 1: Transformational leadership on environmental issues is associated with increases in employees' autonomous motivation (intrinsic, identified) to perform PEBs and with decreases in employees' controlled motivation (extrinsic, introjected) to perform PEBs.

In contrast, transactional leadership on environmental issues may create an overly pressure-laden environment that leads to controlled motivation (Van den Broeck et al., 2008). Contingent rewards and monitoring by supervisors may not necessarily lead to controlled motivation if administered in a manner that signals support and esteem for the employee (Eisenberger & Cameron, 1996; Frost, Osterloh, & Weibel, 2010). However, controlled motivation to engage in PEBs is likely to occur when the leader's transactional behaviors create substantial pressure (Deci & Ryan, 2000; Stone, Deci, & Ryan, 2009; Van den Broeck et al., 2008). For instance, transactional leaders who set overly challenging environmental goals or create a sense of competition among employees are likely to evoke controlled motivation (Stone et al., 2009). Moreover, those who carefully scrutinize employees' environmental performance and provide predominantly critical feedback are likely to make employees to feel controlled and rejected (Frost et al., 2010). In such an environment, employees will feel that they *must* engage in environmental activities, not only to gain extrinsic benefits, but also to avoid the discomfort of being "an exception."

Furthermore, we believe that transactional behaviors are likely to "crowd-out" autonomous motivation of PEBs (Frost et al., 2010). The transactional leader's focus on providing rewards in exchange for environmental tasks and preventing and correcting mistakes is likely to interfere with employees' sense of autonomy, competence, and relatedness. Employees will view environmental behaviors as prescribed by the leader and will not personally "own" these behaviors. In addition, employees will have little opportunity to build their competence on environmental issues; their development will be limited to correcting the problems identified by the leader as he or she intervenes to prevent or correct performance issues. In some cases, high levels of monitoring and critical feedback may actually lower the employee's sense of competence on environmental issues. Furthermore, the leader's monitoring behaviors may lead the employee to experience feelings of distrust that impair the employee's sense of relatedness (Frost et al., 2010). Thus, we propose that:

Proposition 2: Transactional leadership on environmental issues is associated with increases in employees' controlled motivation (extrinsic, introjected) to perform PEBs and with decreases in employees' autonomous motivation (intrinsic, identified) to perform PEBs.

We propose that laissez-faire environmental behaviors will be negatively related to controlled motivation to engage in PEBs. Leaders' behaviors provide employees with information about the work behaviors that are valued in the organization. When leaders avoid involvement in environmental issues, fail to make decisions on environmental issues, or are unavailable when environmental problems occur, employees will believe that PEBs are unimportant. Rational employees will conclude that engaging in PEBs is unnecessary for their success in the organization; they will not experience external or internal pressure to engage in PEBs, and controlled motivation will decline.

We expect laissez-faire behaviors environmental behaviors to be unrelated to autonomous motivation. Although laissez-faire behaviors may cause employees may conclude that PEBs are unimportant in the organization, these behaviors should have little impact on their autonomous motivation to engage in PEBs. Employees who view PEBs as consistent with their own values or inherently interesting should be motivated to engage in PEBs even when the leader is disengaged. Thus, we posit that:

Proposition 3: Laissez-faire leadership on environmental issues is negatively related to controlled motivation (extrinsic, introjected) and unrelated to autonomous motivation (intrinsic, identified) to engage in PEBs.

Effects of Motives on Proenvironmental Behaviors

As shown in Figure 1, we expect employees' motives for PEBs to impact their behaviors. As noted earlier, performance is enhanced when behaviors are motivated by autonomous, rather than controlled, motivation. The self-consistent nature of autonomous motivation facilitates task persistence and enhances performance (Judge et al., 2005; Sheldon & Elliot, 1998, 1999). In contrast, the fact that controlled motivation does not reflect the underlying self, along with the feelings of tension and pressure it evokes, inhibit optimal performance.

Self-determination researchers have found support for the beneficial effects of autonomous motivation in a variety of domains, including educational, health care and work settings (see Bono & Judge, 2003; Deci & Ryan, 2000; Ryan & Deci, 2000). A few studies of PEBs (e.g., reusing, recycling, buying environmentally friendly products, energy conservation) in student populations have found that autonomous motivation is more highly and positively related to the frequency of PEBs than controlled motivation (e.g., Osbaldiston & Sheldon, 2003; Pelletier et al., 1998; Pelletier, 2002). Thus, we would expect identified and intrinsic motivation to facilitate employees' PEBs to a greater extent than extrinsic and introjected motivation.

However, the exact effects of the various motivational types are likely to depend on the nature of the PEB. In particular, the extent to which a PEB is cognitively complex or simple,

arduous or easy, and voluntary or required may influence the effects of the motivational types on behavior (Boiral, 2009; Gagné & Deci, 2005; Pelletier, 2002).

PEBs may be cognitively complex tasks requiring creativity, cognitive flexibility and problem solving (e.g., introducing new environmental management systems, designing green products) or cognitively simple tasks that involve repeatedly applying an existing set of rules or procedures (e.g., recycling paper) (Gagné & Deci, 2005). Autonomous motivation may be positively linked to performance of cognitively complex PEBs; the feelings of engagement created by autonomous motivation may support the high level of cognitive functioning required for performance of these activities (Gagné & Deci, 2005). Controlled motivation may inhibit performance of complex PEBs; the tension and pressure it evokes may impair cognitive activity, leading to reductions cognitive flexibility, creativity, and problem solving (Deci & Ryan, 1985; Gagné & Deci, 2005; Sheldon & Elliot, 1998). When PEBs are cognitively simple (e.g., recycling raw materials), high levels of cognitive functioning will not be required and autonomous and controlled motivation are likely to have fairly similar effects on performance of PEBs (Gagné & Deci, 2005).

Further, some PEBs may require a great deal of effort, energy, and investment of personal resources (e.g., setting up new environmental programs); others (e.g., powering down electronic devices) may not (Green-Demers, Pelletier, & Ménard, 1997; Pelletier, 2002). Although the effort associated with a PEB may overlap with its cognitive complexity, the two are not synonymous. Some PEBs may be arduous (e.g., moving large amounts of scrap material in a manufacturing plant) but cognitively simple. The effort required to perform a particular PEB appears to play an important role in determining the effects of motives (Green-Demers, Pelletier, & Ménard, 1997; Pelletier, 2002). When PEBs require little effort or investment of personal resources, very little motivation is necessary for performance. Thus, differences in the effects of autonomous and controlled motivation are unlikely (Green-Demers et al., 1997; Pelletier, 2002). In contrast, when PEBs require considerable investment of time, energy, and effort, autonomous motivation will be superior to controlled motivation. The self-consistent nature of autonomous motivation increases the likelihood that employees will have the task persistence needed to successfully complete arduous PEBs (Green-Demers et al., 1997; Pelletier, 2002; Judge et al., 2005; Sheldon & Elliot, 1998, 1999). Task persistence is likely to be lower with controlled motivation because such motivation does not derive from the underlying self. The leader may need to provide the employee with additional incentives to evoke the necessary level of task persistence.

The extent to which PEBs are required or voluntary may also be important. Required PEBs as those that are mandatory; they are dictated by the role requirements of the job or organization (e.g., compliance with defined standards). In contrast, voluntary behaviors are discretionary, non-mandatory behaviors that are neither required nor formally rewarded (see Boiral, 2009; Ramus & Killmer, 2007). The extent to which a particular PEB is required or voluntary is not fixed, but varies across organizations and jobs. For example, a simple task such as recycling paper may be part of the policy and practice of some organizations, but may be optional at others.

Scholars (Boiral, 2009; Daily et al., 2009; Ramus & Killmer, 2007) have recently noted that the effectiveness of environmental management systems relies heavily on employees' willingness to engage in voluntary PEBs. Autonomous motivation may play a critical role in facilitating voluntary PEBs. Employees are much more likely to act voluntarily when they are motivated by their own environmental values or by the interest and pleasure they gain from performing PEBs than when they are acting from external or internal pressure (Judge et al., 2005; Sheldon, 1998; 1999). In contrast, there will be little difference in the effects of autonomous and controlled motivation when PEBs are required. Under these circumstances, individual employee initiative will not be needed and either type of motivation should suffice.

Based on the above discussion, we believe that autonomous motivation will be particularly important for the performance of PEBs that are cognitively complex, arduous, or voluntary. Thus, we posit:

Proposition 4: Autonomous motivation (intrinsic, identified) will be more highly associated with performance of PEBs than controlled motivation (extrinsic, introjected).

Proposition 5: The differential effects of autonomous (intrinsic, identified) and controlled (extrinsic, introjected) motivation on performance of PEBs will be largest when PEBs are cognitive complex, arduous, or voluntary.

Implications for Research and Practice

Our framework has several implications for research. First, it would be helpful to examine proenvironmental behavior at the employee level; employees play an important role in the success of environmental initiatives in organizations. Second, researchers should explore how the environmental leadership provided by managers impacts employees' PEBs. In particular, researchers might test the influence of transformational, transactional, and laissez-faire leadership with respect to environmental issues. Researchers should also examine whether employees' motives or reasons for engaging in proenvironmental behaviors mediate the effects of leader behaviors on performance of PEBs. In conducting research on PEBs, researchers must be aware that "all PEBs are not created equal;" differences in cognitive complexity, amount of effort needed, and degree of discretion should be considered.

The framework might be expanded to include organizational (e.g., organizational values, top management commitment) and individual factors (e.g., employee values) that are likely to affect employees' PEBs. For instance, employees may possess higher levels of autonomous motivation to engage in PEBs in organizations where environmental sustainability is endorsed by top management and valued throughout the organization (Banerjee et al., 2003). In such organizations, employees are likely to internalize corporate environmental values and adopt them as their own (i.e., identified motivation). Moreover, employees' managers may be more likely to embrace environmental sustainability, increasing the likelihood that they will engage in leadership behaviors that enhance employees' motivation.

The environmental values of the individual employee may also be important in determining the effects of managers' behaviors. A few recent studies suggest that individuals' environmental values (e.g., valuing nature for its own sake, valuing nature for what it can do for

humans, apathy about nature) impact their environmental beliefs and behaviors (de Groot & Steg, 2007; Schultz & Zelezny, 1999). In the workplace, employees who value nature for its own sake (an eco-centric philosophy) are likely to view sustainability as personally important; they may be more autonomously motivated to engage in PEBs than employees who do not hold such values. Further, the effects of the leader's environmental behaviors may vary as a function of the employee's environmental values. For instance, truly transformational leadership might cause employees who are apathetic about environmental sustainability to adopt proenvironmental values, thereby increasing their autonomous motivation. Transformational leadership might have less of an impact on the autonomous motivation of employees who already hold strong environmental values. Of course, it is also possible that transformational leaders will be unable to reach apathetic employees, but will validate the values of employees who are already committed to sustainability, thereby increasing their autonomous motivation. Future research might explore these issues.

Our framework also has several implications for practice. First, organizations must recognize that the PEBs of individual employees are critical to the success of organizational environmental initiatives; focusing only on technology and systems is likely to be insufficient. Moreover, the environmental leadership provided by the employees' immediate managers is likely to have a critical influence on employees' motivation to engage in PEBs, and, ultimately will impact their behaviors. Thus, organizations must ensure that managers provide appropriate leadership on environmental issues. Given the beneficial effects of transformational leadership on employees' motivation and performance, organizations may want to provide training and coaching to help managers provide such leadership on environmental issues. Transactional leadership may also be appropriate, but it must be provided in a way that supports rather than controls the employee. Developing managers' capacity to provide environmental leadership to their employees is likely to be a good use of organizational resources.

Given the apparent benefits of autonomous motivation for performance of PEBs, organizations may want to enhance the level of autonomous motivation among employees. For instance, organizations might assess employees' motives for engaging in PEBs (e.g., through surveys) and then take steps to encourage autonomous motivation of PEBs (e.g., training to enhance competence on environmental issues, employee involvement in design and implementation of initiatives). In some cases, organizations that are facing substantial environmental challenges may want to devote resources to hiring employees who are autonomously motivated to engage in PEBs.

Conclusion

Although employees' proenvironmental behaviors are critical to the success of organizational environmental initiatives, there is little understanding of the mechanisms that foster these behaviors. Integrating transformational leadership theory and self-determination theory, we offer a framework to guide future research on employee PEBs. Our framework suggests that the environmental leadership behaviors of managers and the motives of employees are critical in determining whether employees engage in PEBs. We describe the possible links between leadership behaviors, employee motives for engaging in PEBs, and performance of PEBs. Each of the factors in our framework is multidimensional, leading to a complex set of

proposed relationships between the factors. Additional work is needed to validate and extend the framework. Nonetheless, our initial framework sets the stage for more fully understanding how organizations may facilitate the proenvironmental behaviors of individual employees, and ultimately, improve corporate environmental programs and sustainability efforts.

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Table 1

Application of Transformational Leadership Theory to Environmental Leadership

Leadership Type	Dimension	Application to Environmental Leadership
Transformational	Idealized influence	The manager serves as a role model on environmental issues by sharing his/her environmental values and beliefs, talking about the importance of protecting nature, and taking actions that demonstrate commitment to environmental issues.
	Inspirational motivation	The manager inspires employees by presenting a positive image of a sustainable future, talking enthusiastically about what the organization and employees must do to create this future, and displaying confidence that environmental goals will be met.
	Intellectual stimulation	The manager encourages innovative thinking about environmental issues by encouraging employees to utilize multiple perspectives and to generate new ideas.
	Individualized consideration	The manager assesses each employee's capacity to address environmental issues and provides individualized training, coaching, and learning opportunities.
Transactional	Contingent reward	The manager specifies employees' environmental performance goals and tasks, as well as the rewards associated with goal accomplishment; he/she administers rewards and approval when goals are met.
	Management by exception – active	The manager watches carefully for environmental mistakes and deviations from environmental standards and intervenes when employees fail to meet standards.
	Management by exception – passive	The manager intervenes only when environmental problems become serious or chronic.
Laissez-faire	Laissez-faire	The manager avoids involvement in environmental issues; he/she does not make decisions on environmental issues or respond to questions on environmental issues.

Table 2
Motives for Proenvironmental Behavior at Work

Type of motivation	Motive	Application in organizations
Autonomous	Intrinsic	Employees are motivated by the fact that they experience proenvironmental behaviors as inherently interesting, fun, or pleasurable.
	Identified	Employees are motivated by their personal beliefs and goals. Environmental sustainability is personally important to the individual.
Controlled	Extrinsic	Employees are motivated by external contingencies, including job requirements, reward systems, and approval from others.
	Introjected	Employees have partially “taken-in” external messages about the environment and feel that they should engage in pro-environmental behaviors. They perform the behaviors to avoid feeling guilty or bad about themselves. They do not fully value PEBs.

Figure 1
Role of Leadership and Motivation in Employee Proenvironmental Behavior

