Greening the Corporation Through Organizational Citizenship Behaviors

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ABSTRACT. Organizational citizenship behaviors have been the topic of much research attempting to understand the motivations, manifestations, and impacts of these behaviors on organizational development. However, studies have been based essentially on an anthropocentric and intra-organizational perspective that tends to ignore broader environmental issues. Due to the complexity of environmental issues and their human, informal, and preventive aspects, consideration of these issues requires voluntary and decentralized initiatives that draw on organizational citizenship behaviors. The role of these behaviors has been neglected, or even ignored, in studies of environmental management, which have focused mainly on the explicit, formal, and prescriptive aspects of organizations. The aim of this article is to shed light on the pertinence of organizational citizenship behaviors in improving the efficacy and efficiency of environmental management. The article discusses how the principal dimensions of these behaviors can be applied to the environmental practices of organizations and underlines their importance in responding to essential challenges of environmental management, including the complexity of environmental issues, limitations of formal management systems, the need to consider tacit knowledge, the importance of helping relationships, and the promotion of social legitimacy among organizations. Measures to encourage eco-efficiency and establish a favorable context for the emergence of citizenship behaviors are also proposed.

KEY WORDS: organizational citizenship behaviors, environmental management, sustainability, pollution prevention, eco-efficiency, voluntary initiatives

Introduction

Consideration of environmental questions outside the workplace is most often addressed from a voluntary perspective drawing more on appropriate civic attitudes shown by individuals rather than on their blind obedience to formal rules. Using ecological modes of transportation, participating in selective trash collection programs, developing responsible shopping, and consumption habits, not wasting water, and other natural resources are all behaviors that stem from individual, discretionary initiatives. The beneficial impacts of the aggregate of these individual citizenship behaviors on air quality in cities and the preservation of ecosystems are indisputable. Paradoxically, the environmental contribution of this type of voluntary citizenship behavior in the workplace has been overlooked in research on how environmental issues are considered within organizations. Most research is centered on formal, explicit, and managerial aspects such as the implementation of environmental management systems, technological innovations, strategic decisions, more or less proactive responses to societal pressures, and costs and benefits of responding to ecological issues (Christmann, 2000; Crane, 2000; Sharma, 2000). From this standpoint, individual, voluntary, and informal initiatives seem to play a secondary or insignificant role in reducing environmental impacts. However, the contribution of these types of voluntary, decentralized, and non-obligatory initiatives to improving organizational performance has been demonstrated by many studies on organizational citizenship behaviors (OCBs). Although these studies have overlooked environmental issues, the conceptual framework used to examine OCBs and their role in organizations may be pertinent to the examination of the role of individual and voluntary environmental behaviors in the workplace.

The objective of this article is to use a conceptual framework inspired by studies of OCBs to show that individual, voluntary citizenship initiatives in the workplace can play an essential role in improving the efficacy and efficiency of environmental management

practices within organizations. The analytical framework of OCBs seems to be quite relevant to the examination of individual, non-mandatory environmental behaviors within organizations. Because of the complexity and diversity of environmental issues, formal management systems cannot consider all possible or desirable behaviors to mitigate ecological impacts (Boiral, 2002, 2007; Jiang and Bansal, 2003). Such behaviors result, at least partially, from individual discretionary initiatives. At the same time, with the development of preventive approaches, employee participation and voluntary pro-environmental behaviors in the workplace have become indispensable in reducing pollution at the source (Boiral, 2005; Florida, 1996; Hanna et al., 2000). This participation depends on a voluntary commitment not entirely formalized or imposed by managers or by management systems in place. More generally, there are connections between prosocial extra-role behaviors and pro-environmental initiatives (Ramus and Killmer, 2007).

These environmental extra-role behaviors are most often ignored or taken for granted, yet they would gain by being considered in environmental management. Similarly, any analysis of OCBs can no longer overlook environmental issues, which constitute a dominant social concern, as much within organizations as well as in society as a whole. Thus, this article aims to build bridges between OCB theories and those of environmental management while shedding light on the pertinence and practical implications of such an approach. Rather than presenting an analysis of the motivations underlying environmental OCBs or developing a behaviorist model of the subject, this article will attempt to show why these behaviors play an essential role in organizational greening and how to promote their development. The taxonomy of OCBs proposed by Organ et al. (2006) will be used to analyze the possible environmental applications of these behaviors. This taxonomy groups' OCBs into six main categories: helping, sportsmanship, organizational loyalty, organizational compliance, individual initiative, and self-development. This article will also show ways in which these citizenship behaviors are needed to meet the complex challenges of environmental management, in particular, the diversity of environmental issues, limitations of formal management systems, consideration of tacit knowledge,

importance of helping relationships, and the promotion of the social legitimacy of the organization.

First, principal concepts associated with OCBs and their possible applications in the environmental domain will be examined. Then, the pertinence of OCBs for environmental management will be analyzed and illustrated from the standpoint of various ecological and organizational issues. Finally, means of promoting environmental OCBs and their implications for managers will be examined and illustrated with different examples.

From organizational citizenship behaviors to corporate greening

Organizational citizenship behaviors have been the subject of an increasing number of studies, particularly since the end of the 1990s (Bergeron, 2007; Cohen and Vigoda, 2000; LePine and Erez, 2002; Paillé, 2006; Podsakoff et al., 2000). These studies have focused mainly on the analysis of bases, motivations, manifestations, impacts on performance, and practical implications of OCBs (Bolino, 1999; Morrison, 1994; Morrison and Phelps, 1999; Organ et al., 2006; Podsakoff et al., 1997; Van Dyne et al., 1994). Despite numerous definitions and approaches to the issue, OCBs are essentially expressed in voluntary initiatives not explicitly required in the definition of job responsibilities that contribute to the improvement of organizational functioning. In their review of literature on the subject, Organ et al. (2006) define these behaviors as ''individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organization'' (Organ et al., 2006, p. 3).

The impact of these voluntary behaviors on organizational efficacy and work satisfaction is well documented. Numerous management approaches and organizational theories have emphasized the importance of cooperation and collaboration between employees (Jones and George, 1998), active participation in activities not listed as specific responsibilities in job descriptions (Kartz, 1964; Ouchi, 1981), sharing of knowledge and suggestions (Boiral, 2002; Garvin, 1991), prosocial behaviors (Brief and Motowildo, 1986; Ramus and Killmer, 2007), and personal development (Kuhnert and Lewis, 1987; Rooke and

Torbert, 2005). Generally speaking, these diverse managerial approaches focus on questioning the formal, impersonal, and technical vision of organizations stemming from traditional management models in which individuals are implicitly considered as cogs in a well-oiled machine. This questioning is generally associated with an increased appreciation of personal initiative and prosocial behaviors contributing to the improvement of collaboration and organizational effectiveness (Bergeron, 2007; Morrison and Phelps, 1999; Organ et al., 2006; Peloza and Hassay, 2006; Van Dyne et al., 1994).

One of the main contributions of research on OCBs is the systematic definition and analysis of different categories of prosocial behaviors, as well as their possible impacts on interpersonal relationships and organizational effectiveness. These classifications have given rise to various taxonomic systems most often sharing certain common themes (LePine and Erez, 2002; Morrison, 1994; Van Dyne et al., 1994). According to Organ et al. (2006), these themes are best expressed using six main categories: helping (spontaneous helping and collaborative behaviors in the workplace), sportsmanship (courtesy and accepting of organizational difficulties), organizational loyalty (defending the corporate image and adherence to objectives), organizational compliance (respect for policies, values, and informal internal rules), individual initiative (internal commitment and sharing of ideas), and self-development (voluntary acquisition of skills and abilities that may improve their contribution to the organization).

However, these taxonomic systems and empirical studies on OCBs remain focused on intra-organizational cooperative and supportive behaviors contributing to improving human relations and organizational functioning. Thus, the benefits of these behaviors are most often assessed in relation to organizational performance or internal human relations rather than external stakeholders and the natural environment.

Ecological issues generally tend to be ignored when examining OCBs, although some initiatives that promote corporate greening imply citizenship behaviors. Indeed, individual initiatives promoting recycling, separating trash at the source, water- and energy-saving measures and suggestions for improvement of environmental practices are often based on voluntary gestures not recognized by formal

management systems (Boiral, 2002, 2005). According to Ramus and Killmer (2007), eco-initiatives can be considered a type of prosocial behavior in the sense that they tend to promote welfare, create value for the organization as well as for society as a whole, and are based on non-rewarded behaviors. Nonetheless, the nature of these behaviors, their connections to the main categories of OCBs, their operational pertinence, and their implications for the environmental management of organizations have yet to be studied.

As shown in the following table, the principal types of OCBs can have relevant environmental applications (Table I).

All categories of OCBs – helping, sportsmanship, loyalty and compliance behaviors, individual initiatives, and self-development – can be directed toward environmental considerations, benefiting not only organizations and their employees, but also society in general and the preservation of ecosystems. Using the definition of Organ et al. (2006) as inspiration, environmental OCBs can be defined as individual and discretionary social behaviors not explicitly recognized by the formal reward system and contributing to improve the effectiveness of environmental management of organizations. Reflecting on pro-environmental behaviors when considering OCBs makes it possible to revisit this concept from a less anthropocentric standpoint and a perspective more in sync with the ecological concerns of society.

First, studies on OCBs are based on an anthropocentric perspective, which, despite emphasis on altruistic behaviors, tends to ignore the fragility of ecosystems and the ecological impacts of economic activities. Questioning this anthropocentric perspective, predominant in management theories in general, is at the heart of reflections on corporate sustainability (Purser et al., 1995; Shrivastava, 1995; Wesley and Vredenburg, 1996). These reflections have focused on proposing a more ecocentric vision, centered more on the preservation of ecosystem integrity. Indeed, the emphasis on organizational performance or work satisfaction implicitly perpetuates mistaken beliefs concerning the possibility of exploiting natural resources indefinitely in response to socioeconomic needs (Purser et al., 1995; Shrivastava, 1995; Wesley and Vredenburg, 1996). Taking environmental issues into account expands the focus of OCBs to include prosocial behaviors

TABLE I

Environmental applications of the main categories of OCBs

Main dimensions of OCBs (Organ et al., 2006)	Main current applications of OCBs	Possible environmental applications
Helping	Altruism at the workplace; voluntary actions aimed at helping others employees, supporting or encouraging other persons; efforts to avoid interpersonal conflicts; promotion of cooperation among employees; helping others in case of absence or work overload; technical support to coworkers or clients; etc.	Altruism with regard to the environment and future generations; behaviors aimed at encouraging other employees to consider these concerns; efforts to avoid conflicts with stakeholders; collaboration to promote environmental initiatives; helping environmental departments accomplish certain tasks; etc.
Sportsmanship	Tolerance of organizational difficulties, inconveniences, and co-worker behaviors; accepting work-related problems without complaining excessively; positive attitude; etc.	Acceptance and positive attitude toward the inconveniences and additional work that can result from environmental practices: waste segregation and recycling, implementation of environmental procedures, etc.
Organizational loyalty	Support for organizational objectives; defense of the corporate image to stakeholders; positive representation of the company to various communities; efforts to improve corporate reputation.	Adherence to pro-environmental policies and objectives; promotion of the organization's environmental concerns among stakeholders; representation of the company at pro-environmental events (roundtables, debates, public hearings); etc.
Organizational compliance	Respect for explicit and implicit organizational rules; respect for deadlines, punctuality; adherence to the values of the organization; etc.	Compliance with environmental values, policies, and procedures; application of environmental standards and regulations that apply to the organization (e.g., ISO 14001, Responsive Care program); etc.
Individual initiative	Internal involvement; sharing ideas and opinions; making constructive suggestions; sharing information and knowledge to improve practices; open questioning of the status quo and inefficient management habits; etc.	Participation in environmental activities; sharing knowledge, information and suggestions on pollution prevention; launching new ecological projects; open questioning of practices likely to damage the environment; etc.
Self-development	Voluntary behaviors to develop personal knowledge, skills, and abilities that could contribute to organizational functioning.	Acquisition of personal knowledge, skills, and values aimed at gaining a better understanding and integration of environmental concerns; participation in programs of education for sustainable development; acquisition of environmental information that could be useful to the organization: green technologies, sociopolitical trends, etc.

that have a broader contributory impact on sustainable development (Peloza and Hassay, 2006).

Second, considering environmental issues in analyses of OCBs sheds light on social and ecological benefits that tend to be overlooked by the more

standard approach. A reduction of ecological impacts through environmental OCBs can contribute to improving the living conditions of neighboring populations, reducing or preventing stakeholder pressure, and improving an organization's image or

reputation. In addition, the environmental commitment of employees and organizations can heighten feelings of belonging and pride, thus motivating at work (Boiral, 2002, 2005; Winter, 1988).

Finally, employees are also citizens who may be subject to negative consequences resulting from the release of contaminants within or outside the work environment. Such emissions affect not only the health of workers and neighboring populations, but also often have long-term and global consequences, including impacts on future generations.

However, whatever their beneficial effects, environmental OCBs presuppose individual voluntary initiatives that go beyond habitual expectations found in formal job descriptions and that are not explicitly recognized by an organization's reward system. These realities call for a more specific reflection on the pertinence of analyzing the environmental actions of organizations from the behavioral, voluntary, and non-obligatory perspective proposed by OCB literature.

Environmental management and organizational citizenship behaviors

Taking behavioral aspects and voluntary initiatives into account in environmental management is a relatively recent phenomenon. For many years, the environmental management of organizations has been based on a technical and palliative approach consisting, in manufacturing industries, of installing systems to control contaminant emission downstream of the manufacturing processes (Florida, 1996; Hart, 1995). In this palliative approach, technical services responsible for measuring and controlling pollutants addressed environmental issues. Organizations recognized environmental initiatives and voluntary behaviors to some extent, focusing primarily on responding to regulatory pressures using antipollution technologies and reactive measures. Since the 1990s, the development of preventive approaches has highlighted the importance of human behavior in the reduction of pollution at the source (Boiral, 2005). The prevention of pollution implies the integration of environmental concerns into daily activities and the active involvement of employees, in particular, employees whose jobs might have an impact on the environment (Cordano and Frieze, 2000; Hart,

1995). This rationale of prevention, integration, and involvement is central to environmental management systems of which the ISO 14001 standard is the reference model (Boiral, 2007; Kitazawa and Sarkis, 2000). However, environmental management systems such as ISO 14001 are based on formally prescribed roles and procedures and not on the voluntary and non-obligatory rationale of OCBs.

Although the OCB rationale has not really been used in environmental management analyses, many studies have stressed the importance of employee mobilization and voluntary initiatives more or less explicitly. Most of this research is based on case studies of companies successful in environmental management (Boiral, 2005; Johansen, 1998; Kitazawa and Sarkis, 2000) or on quantitative research examining the significance of the contribution made by individual behaviors (Hanna et al., 2000; Ruiz-Quintanilla et al., 1996; Theyel, 2000). However, the nature of these behaviors, notably the distinction between explicit job requirements and voluntary initiatives, is rarely or never specified. Thus, the role of human behavior is usually referred to, in a general way, as a sort of virtuous principle, without specifying whether it is a question of behavior resulting from environmental management systems in place (procedures, job descriptions, etc.) or environmental OCBs. In addition, the development of management systems such as ISO 14001 tends to formalize environmental practices within organizations, relegating voluntary, non-obligatory OCB initiatives to a secondary or insignificant role.

Nevertheless, irrespective of the management systems in place, it is reasonable to assume that environmental OCBs play a crucial role in preventing pollution and promoting corporate greening. Many characteristics of environmental management justify a more systematic consideration of OCBs in both research and practice:

- Diversity and complexity of environmental issues;
- Limitations of formal management systems;
- Role of tacit knowledge;
- Importance of helping relationships and collaboration in the prevention of pollution; and
- Social legitimacy and the civic nature of voluntary ecological initiatives.

First, the environmental impact of an organization depends on a multitude of social and technical

factors that cannot be covered entirely by prescribed tasks (Boiral, 2005; Hart, 1995). According to the ISO 14001 standard for environmental management systems, ''environmental aspects'' can be defined as the ''elements of an organization's activities, products, or services which can interact with the environment'' (Standards Council of Canada, 2004, p. 2). Lists of environmental aspects are generally long, difficult to establish, and inevitably incomplete because of the multiplicity of activities, behaviors, and technical systems that can interact with the environment. Thus, upstream of the production process, the environmental impact of organizational activities depends on the combination of a multitude of socio-technical factors and behaviors. For example, the volume of recovered and recycled residues within an organization depends on the behavior of many individuals in the workplace. In isolation, individual behaviors that are rarely stipulated in job descriptions seem to have relatively little impact. However, their multiplication throughout the entire organization can make the difference between good or poor environmental performance (Boiral, 2005; Ruiz-Quintanilla et al., 1996). The same observation could apply to the emission of certain toxic products in factory effluents or to saving materials and energy. The effect of the combination of these individual pro-environmental behaviors is quite similar to that described in OCB theories, which postulate that the aggregate total of non–obligatory citizenship behaviors can have an impact on organizational performance (Organ et al., 2006). Because of their complexity, multiplicity, and contingent nature, these behaviors cannot be based solely on procedures, required tasks, and formal reward systems. The difficulty of formalizing and rewarding pro-environmental behaviors in organizations is exacerbated by their often anonymous and contingent nature. In addition, because these behaviors are not directed toward people but toward the improvement of the external environment, they are often less visible, less conspicuous, and thus more difficult to recognize. For example, recovering and storing an environmentally dangerous product in an appropriate container rather than pouring it down the drain is an ecological act that can go unnoticed by others, yet it contributes to the preservation of the environment. Because these types of gestures are generally voluntary, anonymous, and unrecognized,

it is difficult to link them to a formal reward or punishment system.

Second, environmental OCBs are necessary to promote the implementation of formal management systems and compensate for their deficiencies. Thus, the success of the implementation of environmental management systems such as ISO 14001 requires the active participation of employees and an approach not limited to procedural aspects of the system. Numerous studies have shown that the effective impact of ISO management standards on performance improvement depends on employee involvement (Boiral, 2007; Jiang and Bansal, 2003; Kitazawa and Sarkis, 2000). The benefits of environmental management systems such as ISO 14001 depend less on the fact of being certified or following procedures, and more on the internal mobilization that these systems can entail. Such mobilization goes beyond the framework of prescribed tasks and assumes the emergence of environmental OCBs, notably organizational compliance and individual initiatives. Thus, to be effective, environmental management systems should give rise to a certain conformity in terms of environmental values, policies, and programs developed, but also to active participation in the implementation and improvement of the system through action such as sharing information and suggestions, participating in the identification of environmental issues and questioning practices detrimental to the environment (Boiral and Sala, 1998). Such participation should not be limited to documented, prescribed, and procedural aspects. Indeed, an over-formalized consideration of these aspects could lead to some unintentional consequences, in particular, excess paperwork and the bureaucratization of practices (Boiral, 2003, 2007; Jiang and Bansal, 2003; Walgenbach, 2001). Such bureaucratization is even more burdensome when the organization tries to formalize many pro-environmental behaviors. The impossibility of documenting all of the behaviors and the bureaucratic burden that results from the effort to do so effectively reinforces the role of voluntary initiatives not required by the management system. In addition, environmental initiatives demand a certain sportsmanship on the part of employees due to the added effort often required. Just as with pro-environmental behaviors outside the workplace, the integration of environmental concerns into

workplace practices often involves added work and inconvenience to employees, such as extra steps to bring specific residues to the appropriate container, clean-up operations after accidental spills, and the questioning of certain shortcuts in carrying out procedures. Active participation in these tasks and accepting the drawbacks involved implies environmental OCBs that go beyond the framework of formal policies in place.

Environmental OCBs are also needed to promote sharing and consideration of employees' tacit knowledge. Tacit knowledge can be defined as personal knowledge that is implicit, difficult to codify, and related to action-oriented hands-on learning (Inkepen and Dinur, 1998; Polanyi, 1962). The role of this implicit and personal knowledge has been demonstrated by various studies on organizational learning and knowledge management (Boiral, 2002; Lam, 2000; Nonaka, 1994). Tacit knowledge helps develop a comparative advantage that is difficult for competitors to imitate because it is based on implicit and informal aspects that elude job and procedural descriptions (Prahalad and Hamel, 1990). Nonetheless, the application of this type of knowledge to concrete situations, in particular, to the field of environmental management, has been neglected. Yet, tacit knowledge plays a fundamental role in this domain, notably in the identification of sources of pollution and rapid reactions to potential incidents (Boiral, 2002; Hart, 1995). Because of their proximity to the processes at the source of contaminant discharges, workers are often in the best position to detect irregularities or find sources of contaminant emissions. Such detection generally occurs in the form of a sensory experience or circumstantial information difficult to formalize or render explicit. For example, operators can often observe chronic leaks of toxic products from processes or identify technical malfunctions that may have significant environmental impacts. Detection of environmental issues often eludes management systems and surveillance by environmental specialists who do not work directly at the level of production operations. Therefore, detection of such environmental issues relies on tacit knowledge that workers may or may not choose to share. Because of its individual, discretionary, and informal nature, the sharing of tacit knowledge results in environmental OCBs essential to promoting measures that prevent pollution. These

preventive measures also apply to the management of incidents often resulting from unusual situations that are difficult to codify and tend to go unnoticed. For example, small accidental spills are not always declared or taken into account by management systems, even though their occurrence and their accumulation can be the source of more serious and long-term environmental impacts. In certain cases, the speed of employee intervention is important in preventing more serious accidents. Whatever the possible consequences of such incidents, the process of detection and speedy intervention depends in part on tacit knowledge (Boiral, 2002). Thus, whether applied to sources of chronic pollution or more occasional incidents, tacit knowledge is based on private information and personal experience that may be made available for the benefit of the organization, depending, essentially, on discretionary behavior.

Environmental OCBs are also essential to stimulating help and collaboration in the search for ecological solutions or the implementation of preventive measures. The process of helping and collaboration is necessary for many reasons. First, environmental management, particularly preventive action, requires a transverse and interdisciplinary approach that implies close collaboration at various organizational levels (Hart, 1995; Starik and Rands, 1995). The introduction of green procedures and practices, selection of suppliers according to environmental criteria, improved relationships with communities, ecological product design, and the implementation of policies and training programs are all generally based on teamwork involving the environmental department and various specialists. Such internal collaboration is often based on voluntary discretionary commitment, not on required behaviors. Indeed, environmental departments generally have an advisory role within organizations. They do not have the authority to impose or formalize new practices without the voluntary participation of employees and supervisors from other departments (Boiral, 2005). In this context, environmental actions are often viewed by organizations as voluntary and discretionary behavior to assist environmental departments unable to shoulder the responsibility for all the initiatives in this area. Second, the development of preventive solutions upstream of production processes often demands

collaboration between technical services and production employees. Such collaboration involves both the formal knowledge of engineers and the tacit knowledge of employees in the joint implementation of solutions adapted to internal needs (Boiral, 2002; Hart, 1995). Consideration of circumstantial ideas, suggestions, and information is an integral part of this process of collaboration implying citizenship behavior shown by individuals seeking to help the environmental department regardless of their required tasks. Such citizenship behavior can be reinforced by personal development initiatives, notably by the acquisition of individual skills that could contribute to the integration of environmental innovations or new ideas in the field. For example, employees could acquire, outside of the workplace, pertinent environmental information via personal reading, participation in training programs, or involvement in environmental organizations. Sharing of this information and know-how can help organizations apply new practices and ideas.

The last aspect that reinforces the role and pertinence of OCBs in environmental management is the civic nature and social legitimacy associated with voluntary ecological initiatives. Environmental initiatives within organizations are partly motivated by the ecological sensitivity of individuals outside the workplace. Employees are also citizens often concerned about ecological issues who, to some extent, are accustomed to addressing environmental concerns independently of their professional activity. Many environmental gestures outside the workplace are quite similar in principle to those implemented within organizations, such as saving water and energy, recycling residues, buying environmentally friendly products, and using less-polluting modes of transportation. Thus, voluntary environmental behaviors in the workplace could constitute a natural and unconstrained extension of green citizenship independent of required tasks within the organization. In this perspective, it is reasonable to assume that promoting environmental education, information, and values outside the workplace tends to have a positive impact on environmental OCBs inside the workplace. This type of formal and informal education is at the center of the various initiatives originating with the UN Decade of Education for Sustainable Development (2005–2014), which was decided by the United Nations General Assembly (Michalos et al., 2008). These initiatives tend to strengthen ethical concerns, constituting one of the main motivations for environmental actions more or less in phase with the organizational culture (Bansal, 2003; Bansal and Roth, 2000; Hoffman, 1993). More generally, as shown by Cohen and Vigoda (2000), extra-organizational citizenship behavior can, to a certain extent, influence intra-organizational OCBs, in particular, with regard to organizational compliance. The importance of environmental issues in assuring the social legitimacy of organizations can also reinforce the importance of OCBs centered on the organizational loyalty of individuals. This loyalty may be exhibited by various behaviors serving to demonstrate the ecological commitment of the organization, such as improving the organizational image perceived by environmental groups or in external debates and conferences; becoming personally involved in community environmental programs supported by the organization (planting trees, watercourse clean-up operations, etc.); and collaborating with the media, students, or academics wanting to gain a better understanding of environmental actions taken by the organization. Such organizational loyalty behaviors are more sincere, consistent, and likely to occur when environmental actions taken and organizational culture are in phase with the personal environmental values of employees (Bansal, 2003; Hoffman, 1993; Stone, 2000).

Promoting eco-efficiency and environmental citizenship behaviors

The pertinence of environmental OCBs does not depend solely on their contribution to the ecological action taken by organizations, but also on their impact on economic performance and the possibility for managers to stimulate their emergence. If such behaviors prove to be inefficient and difficult to promote in the workplace, the interest they hold for management will remain limited. Due to the voluntary and informal nature of OCBs, research on its impacts and management in organizations remains controversial.

A number of studies analyzing the effects of OCBs on organizational performance has culminated in the re-examination and revision of much

more traditional thinking about the complex connections between work satisfaction and productivity (Organ et al., 2006; Podsakoff et al., 1997; Van Dyne et al., 1994). Although these connections remain unclear, many studies have questioned the often very restrictive definitions of performance and productivity (Cameron, 1986; Ostroff and Schmitt, 1993). The concept of organizational performance is in itself complex and ambiguous, and it can be measured using numerous and sometimes contradictory criteria (Cameron, 1986; Henri, 2004). Thus, OCBs can have a more positive impact on some performance criteria than on others. In addition, although research on OCBs has shown that these behaviors have a positive link with diverse performance indicators, the direction of causality between OCBs and performance is controversial (Bachrach et al., 2001; Organ et al., 2006).

The same type of comment may apply to the analysis of the economic impacts of environmental actions, which have been the subject of numerous studies. Although the win-win perspective predominates today, the direction and reasons for the link between environmental actions and performance are still subject to question (Roy et al., 2001; Walley and Whitehead, 1994). Like OCBs, environmental initiatives might be a consequence rather than a cause of organizational performance and good practices implemented by the most efficient organizations. Indeed, environmental performance results from a multitude of factors and initiatives often not dissociable from efforts to improve organizational productivity, excellence, and efficiency, including technological innovation, loss and waste reduction, lean management, and employee participation (Florida, 1996; Hart, 1995; Roy et al., 2001). Thus, the effects of environmental actions on performance should be analyzed from a contingent perspective, differentiating the effects of various types of initiatives such as preventive measures, installation of purification systems downstream of processes, training programs, recuperation and recycling, establishing environmental performance indicators, and individual behaviors. These diverse initiatives can have very variable impacts on eco-efficiency, i.e., on the improvement of environmental performance in an efficient way or by contributing to achieving economic objectives (Roy et al., 2001). While the

nature and implications of environmental OCBs have not been studied directly, it is reasonable to assume that these voluntary behaviors contribute to the improvement of organizational eco-efficiency.

Indeed, improving the eco-efficiency of an organization is often associated with preventive measures and employee commitment, particularly within manufacturing companies (Ruiz-Quintanilla et al., 1996; Theyel, 2000). Contrary to palliative action generally based on costly pollution treatment systems installed downstream of processes, preventive measures are generally inseparable from efforts to improve productivity. Thus, the reduction of pollution at the source implies improvements in procedures, practices, and behaviors that cause contaminant releases (Cordano and Frieze, 2000; Hart, 1995; Roy et al., 2001). Such improvements require voluntary individual initiatives to deal with the diversity and complexity of environmental issues related to preventive measures. Environmental OCBs are also needed to promote the implementation and acceptance of changes in work processes, including employee compliance with new practices, exchange of information and sharing of tacit knowledge, acceptance of constraints related to the prevention of pollution, and collaboration with technical services to develop cleaner processes.

Environmental OCBs can engender certain costs due to the time and effort involved. However, because these are voluntary and spontaneous efforts, they are generally embedded in daily activities and are not supposed to disrupt the normal execution of required tasks. On the contrary, these citizenship behaviors tend to facilitate daily operations and appear to act as a sort of social lubricant, encouraging mutual assistance and collaboration within organizations (Organ et al., 2006). In addition, OCBs can contribute to averting certain environmental costs. For example, employee initiatives to prevent pollution can reduce the costs of contaminant treatment downstream of the production process or avoid the installation of palliative systems (Boiral, 2005). Voluntary environmental initiatives can also contribute to the reduction of the risk of crises and resulting negative impacts on the image and social legitimacy of the organization. Generally speaking, such initiatives help strengthen the social and environmental responsibility of the organization. Thus, environmental OCBs in the workplace contribute to

the development of real organizational citizenship, acting as a kind of invisible asset (Gardberg and Fombrun, 2006) strengthening the social legitimacy and acceptability of organizations on different markets. Contrary to greenwash measures, intended above all to improve a company's external image, citizenship behaviors are fundamentally based on concrete internal initiatives that are often inconspicuous, but help to improve the efficacy and efficiency of environmental practices.

This reinforcement of organizational citizenship can also result in indirect benefits for human resources management and the working climate, such as employee motivation, feelings of belonging and pride in working for an environmentally friendly organization, compliance with organizational goals, and increased ease of attracting and keeping good employees. In addition, environmental OCBs can reduce the costs and burden associated with the bureaucratic and formalized integration of environmental management systems such as ISO 14001. Indeed, this form of integration is often the result of a lack of internal participation, all too systematic recourse to external consultants who often do not know the organization well or from a ceremonial preparation of the certification audit essentially focused on the verification of written documentation (Boiral, 2003, 2007; Walgenbach, 2001). Thus, a ceremonial and formalistic integration of a standard tends to appear as a costly and burdensome process disassociated from internal practices. Because they reinforce voluntary initiatives and organizational compliance, as well as helping and collaborative behaviors, environmental OCBs can reduce these pervasive effects and encourage a more flexible and natural integration of a standard.

More generally, environmental OCBs tend to improve the social context and provide the necessary conditions for the implementation of eco-efficient practices and initiatives. While promotion of these initiatives seems crucial to effective environmental management, managers eager to consider the importance of OCBs seem confronted with a dilemma. Measures needed to promote environmental OCBs tend to question the voluntary and non-obligatory nature of these behaviors. Then again, in the absence of measures encouraging OCBs, they are at risk of being reduced to uncertain, sporadic, and uncontrollable behaviors. Although

this type of dilemma may seem to be inherent in the application of OCBs, it is useful to qualify the apparent paradoxes that can result from efforts to implement this concept. In essence, the degree to which organizational behaviors are mandatory or rewarded should not be viewed in an exclusive or monolithic manner, but rather as a continuum (Organ, 1997; Organ et al., 2006). Although OCBs may seem removed from prescribed tasks and formal reward systems within this continuum, this does not mean that the behaviors are entirely spontaneous and cannot be encouraged indirectly by management. Indeed, managers can promote a context, climate, and conditions favorable to the emergence of voluntary and discretionary environmental initiatives not directly or explicitly rewarded by the organization. A context favorable to environmental OCBs can be encouraged in different ways, particularly through green leadership by managers, the development of a pro-environmental culture, the establishment of voluntary programs and structures, and adapted training, information, and recruitment policies.

First, environmental leadership and managerial commitment tend to stimulate environmental OCBs among employees. Generally speaking, the leadership style of managers is considered to be a major determinant of OCBs (Organ et al., 2006; Podsakoff et al., 2000). Leadership is not based on required tasks and the formal management systems in place, but rather on the ability of managers to influence employees and bring them to comply voluntarily with a shared vision (Kuhnert and Lewis, 1987; Rooke and Torbert, 2005). If leadership is able to stimulate OCBs, this link can be further strengthened by various factors such as the manager's personality, values, and individual behavior. Thus, it is reasonable to assume that managers who are truly concerned about environmental issues and adopt green behaviors in their daily activities would tend to encourage ecological initiatives within their organization. Thus, leadership influence is exercised in part through the promotion of values and individual behaviors that tend to act as examples within the organization, such as support for environmental causes or groups, salvaging and recycling, use of ecological modes of transportation, and responsible consumption. The importance of leadership in promoting environmental values and behavior has

been highlighted by several studies (Bansal and Roth, 2000; Egri and Herman, 2000; Johansen, 1998). Moreover, the environmental leadership of management is usually at the root of the ecological commitment of organizations considered models for the integration and promotion of sustainable development, such as Interface, The Body Shop, Patagonia, and Ben & Jerry's.

The development of a pro-environmental corporate culture also tends to favor environmental OCBs and impart a sense of environmental responsibility to employees. To emphasize the importance of conferring a sense of responsibility, various studies of environmental management have stressed the necessity of promoting a ''green culture'' (Hoffman, 1993; Howard-Grenville, 2006; Stead and Stead, 1994). According to this cultural perspective, disseminating environmental values and heightening employees' environmental awareness appear to be essential conditions for an ecological shift in organizations and the emergence of environmental initiatives. However, as with OCBs, organizational culture and the emergence of green values depend in part on factors difficult to control, such as societal standards and values, organizational history, economic sector of activity, symbolic events, and industry macroculture (Harris and Crane, 2002).

Environmental OCBs can also be promoted through the establishment of voluntary programs and appropriate support structures. These voluntary programs can take place outside the organization. In this case, environmental OCBs espoused by employees help reinforce the organizational image by demonstrating commitment through concrete initiatives not limited to financial support. For example, some companies, such as the Campbell Soup Company, encourage their employees to volunteer for community activities by offering time and money to support such involvement (Peloza and Hassay, 2006). Promoting this type of voluntary citizenship behavior can be accomplished through various programs. At Alcoa, the ACTION (Alcoans Coming Together In Our Neighborhoods) and Bravo! programs are intended to promote community involvement by employees participating directly in projects or devoting more than 50 h per year to a non-profit organization. These volunteer programs, which have financed many sustainable development programs around the world, are run by the Alcoa

Foundation, which had a budget of nearly $23 million in 2005.

Voluntary environmental programs can also take place within an organization or in the context of employee transportation. Bell Canada, for example, has set up various voluntary internal programs to reduce greenhouse gas. The Everyday Kyoto program, established by Bell Canada in partnership with Environment Canada and an environmental association, promotes various non-prescribed voluntary initiatives in this area, including making bicycles and helmets available free of charge to favor ecological commuting by employees, encouraging telecommuting and teleconferencing, and promoting energy savings. In order to favor the development of this type of program and internal environmental collaboration, organizations often have recourse to green committees made up of representatives from various departments or specialties. These committees are generally responsible for collecting ideas and promoting internal environmental initiatives (Boiral, 2005). Participation in these committees is often voluntary, optional, and not recognized by formal reward systems. Thus, the formation and operation of green committees provides fertile ground for the development of environmental OCBs within organizations.

Adapted training, information, and recruitment policies can also help create a context favorable to the emergence of environmental OCBs. Training promotes the spread of values that encourage behaviors not necessarily stipulated in job descriptions or recognized by the formal reward system. For example, increasing employee awareness of the impact of certain contaminants on local ecosystems can favor voluntary initiatives to limit or prevent discharges of such contaminants. Internal communication can also be used to highlight the importance of environmental issues and stimulate individual initiatives in this area through internal bulletins, environmental reports, dissemination of the organization's environmental policy, and publication of environmental performance statistics, among other methods. Lastly, the introduction of environmental criteria to recruiting and hiring policies can have an impact on environmental OCBs. Recruiting employees who are already well aware of, or trained in, environmental issues may favor spontaneous initiatives in this area, irrespective of internal

awareness programs. However, this practice can be difficult to implement and organizations generally prefer to establish specific programs intended for new employees. This is the case at Dell, where recently hired employees and full-time contractors are introduced to environmental issues of concern to the company.

Conclusion

Studies of environmental management have tended to overlook the role of voluntary, informal and unplanned individual initiatives in the workplace. Their emphasis on formal environmental management systems and explicit aspects of environmental management suggests a rational and formalist image of the manner in which these issues are considered within organizations. This rational image is explained in part by concerns for social legitimacy and the desire to show that environmental issues are effectively under control. Accordingly, setting up management systems such as ISO 14001, or introducing environmental technologies, conveys to various stakeholders a reassuring image of rationality, order, and control. While these visible and explicit measures seem indispensable in dealing with environmental issues, they suggest a reified and mechanistic image of organizations that neglects human aspects and the meaning of environmental actions (Crane, 2000). By considering environmental OCBs, more informal and less visible behaviors imparting meaning to environmental actions can be showcased and incorporated into the process of corporate greening. Environmental OCBs also play an essential role in the efficacy and efficiency of this greening process, especially through the development of preventive approaches calling for the voluntary commitment of employees to pollution reduction at the source.

This involvement depends not only on explicit job descriptions and formal reward systems in place within organizations, but also on discretionary initiatives that fit the main postulates of OCB approaches. Environmental OCBs also play an essential role in accounting for the complexity and diversity of environmental issues, avoiding a too superficial and ritualized integration of environmental management systems and promoting the sharing of pertinent tacit knowledge.

Generally speaking, environmental OCBs contribute to improving the efficiency of pollution prevention and help create a social context encouraging the integration of ecological issues into daily activities. Thus, these behaviors help promote sustainable development within organizations. This concept is often defined with regard to the search for a balance among environmental, social, and economic issues (Shrivastava, 1995; Stead and Stead, 1994; Wesley and Vredenburg, 1996). Numerous models and approaches for sustainable development have been proposed without a clear consensus emerging on how to implement the concept (Springett, 2003). Because they are based on concrete behaviors contributing to eco-efficiency and promoting improvement of the social and environmental responsibility of organizations, environmental OCBs assuredly represent an essential aspect of implementation of sustainable development within organizations. This article helps highlight the importance of the informal and behavioral aspects often neglected in environmental management and debates on sustainable development.

More specifically, this article makes three main contributions. First, it contributes theoretically to current approaches to OCBs, showing how consideration of environmental issues fills some gaps in these approaches, particularly with respect to their anthropocentric character and intra-organizational goals. Such consideration appears even more desirable given that the main dimensions of the OCB concept can also be applied to the management of environmental issues. Thus, environmental issues seem to be an area where OCBs can apply and are also a more global concern allowing the concept of OCBs to be revisited and expanded. Second, this article shows how consideration of OCBs leads to a less formalist vision of environmental management by shedding light on the importance of initiatives that are voluntary, informal, and not explicitly recognized. Although these initiatives are not sufficient, in their own right, to respond to environmental issues, they appear to be embedded in social and technical systems and are necessary for these systems to run well. Third, this article shows how management can develop a context favorable to the emergence of environmental OCBs. While these behaviors are by nature voluntary and unrewarded, and consequently difficult to control, some measures can indirectly encourage their emergence.

However, the relevance and promotion of environmental OCBs does not directly challenge or undermine the establishment of more formal management practices. Environmental OCBs can coexist with more formal methods such as the ISO 14001 certification or the development of measures to reward green behaviors. The pertinence of OCBs does not result from the inefficacy of more formal measures, but rather from their insufficiency and impossibility of any management system to consider all possible or desirable environmental behaviors. Then again, some formal and explicit management practices can encourage the emergence of voluntary initiatives. For example, some studies have shown that leader reward and punishment behavior or task feedback can have a direct or indirect influence on various aspects of OCB (Organ et al., 2006). While the nature and reasons for this influence have yet to be clearly established, these studies show that OCBs are not completely spontaneous behaviors independent of existing managerial practices.

In the absence of empirical research on environmental OCBs, it is difficult to describe their determinants precisely, as well as possible links with certain management practices or their impact on organizations. Nonetheless, the proposals in this article offer the prospect of much interesting research.

First, the environmental applications of the main categories of OCBs should be validated empirically. For example, it would be interesting to assess the degree to which the various categories of environmental OCBs identified in this article are associated with real work behaviors in different types of organizations and with sustainability policies. The relationship between general OCBs and environmental OCBs would also be interesting to study. In particular, such research would help determine whether voluntary environmental initiatives are closely linked to general OCBs and could be considered a special application of general OCBs or whether it is a question of different constructs.

Second, the analysis of connections between environmental OCBs and individual attitudes toward different values or ecological concerns would allow an evaluation of the degree to which adherence to ethical principles is reflected in voluntary and concrete acts. These voluntary acts could be related to personal values and general education rather than formal training and tasks requirements inside the workplace.

Indeed, a recent study suggests that attitudes concerning sustainable development and general education have much more impact on behaviors than formal knowledge on sustainable development (Michalos et al., 2008). This study tends to suggest that education and values acquired outside the workplace could have a higher impact on environmental OCBs than formal programs intended to develop specific environmental knowledge within the workplace. Generally speaking, analyzing the complex links among knowledge, attitudes, and environmental OCBs seems essential in guiding effective green initiatives inside as well as outside the workplace. The same type of analysis could be conducted to examine the impact of social pressure brought to bear by various stakeholders (environmental groups, governments, citizens, etc.) and organizational leadership. For example, the existence of a positive link between the intensity of such pressure and environmental OCBs could indicate that these behaviors are not really spontaneous and are a response, in part, to extra-organizational constraints and concerns. In effect, concern for appearances, social visibility, and political opportunism might partially explain the emergence of OCBs (Bolino, 1999).

Third, the relationship between formal environmental management systems and environmental OCBs could be studied better to understand the details and interactions of these systems. For example, it would be interesting to examine to what degree ISO 14001 certification promotes the emergence of environmental OCBs and whether the latter could explain the successful implementation of this standard. Since one of the main factors affecting successful implementation of ISO management standards is individual adherence and the internal initiatives that could result from such adherence (Boiral, 2007; Jiang and Bansal, 2003; Kitazawa and Sarkis, 2000), it is reasonable to assume that more active OCBs would help improve the efficacy of ISO 14001 certification. This hypothesis seems even more plausible, given that OCBs are often viewed as a form of social lubricant that improves organizational operations and practices in place (Organ et al., 2006).

One last area of research would be to study the impacts of OCBs on environmental performance. Research that has examined the determinants of environmental performance has focused primarily on the formal and explicit aspects, including external

pressure, technological innovation, established policy, and environmental management systems such as the ISO 14001 certification (Christmann, 2000; Roy et al., 2001; Ruiz-Quintanilla et al., 1996; Theyel, 2000). Environmental OCBs could directly influence environmental performance or play a more indirect role by influencing other determinants of performance. The impact on environmental performance might also be compared on the basis of the type of OCB examined, whether individual initiatives, helping, or organizational compliance.

Although these quantitative approaches are useful for research on the determinants and impacts of environmental OCBs, this concept would also stand to gain from research using more qualitative approaches. Due to their informal, tacit, and behavioral aspects, environmental OCBs cannot be reduced solely to measurable and quantifiable variables. Qualitative empirical observations would allow the development of a better understanding of the real role of voluntary behaviors in the environmental management of organizations based, to an ever greater extent, on formal and standardized practices. In any case, because they are on the fringe of formal practices, by their very nature OCBs will always remain difficult to understand, explain, and manage, irrespective of their true impact on the environmental and social responsibility of organizations.

Acknowledgments

References

Bachrach, D. G., E. Bendoly and P. M. Podsakoff: 2001, 'Attributions of the ''Causes'' of Group Performance as an Alternative Explanation of the Relationship Between Organizational Citizenship Behavior and Organizational Performance', *The Journal of Applied Psychology* **86**(6), 1285–1293. doi:10.1037/0021-9010.86.6.1285.

Bansal, P.: 2003, 'From Issues to Actions: The Importance of Individual Concerns and Organizational Value in Responding to Natural Environmental Issues', *Organization Science* **14**(5), 510–527. doi:10.1287/orsc.14.5.510.16765.

Bansal, P. and K. Roth: 2000, 'Why Companies Go Green: A Model of Ecological Responsiveness', *Academy of Management Journal* **43**(4), 717–736. doi:10.2307/1556363.

Bergeron, D. M.: 2007, 'The Potential Paradox of Organizational Citizenship Behavior: Good Citizens at What Cost?', *Academy of Management Review* **32**(4), 1078–1095.

Boiral, O.: 2002, 'Tacit Knowledge and Environmental Management', *Long Range Planning* **35**(3), 291–317. doi:10.1016/S0024-6301(02)00047-X.

Boiral, O.: 2003, 'ISO 9000, Outside the Iron Cage', *Organization Science* **14**(6), 720–737.

Boiral, O.: 2005, 'The Impact of Operator Involvement in Pollution Reduction: Case Studies in Canadian Chemical Companies', *Business Strategy and the Environment* **14**(6), 339–360. doi:10.1002/bse.431.

Boiral, O.: 2007, 'Corporate Greening Through ISO 14001: A Rational Myth?', *Organization Science* **18**(1), 127–146. doi:10.1287/orsc.1060.0224.

Boiral, O. and J. M. Sala: 1998, 'Environmental Management: Should Industry Adopt ISO 14001?', *Business Horizons* **41**(1), 57–64. doi:10.1016/S0007-6813(98)90065-9.

Bolino, M. C.: 1999, 'Citizenship and Impression Management: Good Soldiers or Good Actors?', *Academy of Management Review* **24**(1), 82–98. doi:10.2307/259038.

Brief, A. P. and S. J. Motowildo: 1986, 'Prosocial Organizational Behaviors', *Academy of Management Review* **11**(4), 710–725. doi:10.2307/258391.

Cameron, K. S.: 1986, 'Effectiveness as Paradox: Consensus and Conflict in Conceptions of Organizational Effectiveness', *Management Science* **32**(5), 539–553.

Christmann, P.: 2000, 'Effects of ''Best Practices'' of Environmental Management on Cost Advantage: The Role of Complementary Assets', *Academy of Management Journal* **43**(4), 663–680. doi:10.2307/1556360.

Cohen, A. and E. Vigoda: 2000, 'Do Good Citizens Make Good Organizational Citizens?: An Empirical Examination of the Relationship Between General Citizenship and Organizational Citizenship Behavior', *Israel Administration Society* **32**(5), 596–624. doi:10.1177/00953990022019597.

Cordano, M. and I. H. Frieze: 2000, 'Pollution Reduction Preferences of U.S. Environmental Managers: Applying Ajzen's Theory of Planned Behaviour', *Academy of Management Journal* **43**(4), 627–641. doi:10.2307/1556358.

Crane, A.: 2000, 'Corporate Greening as a Moralization', *Organization Studies* **4**(21), 673–696. doi:10.1177/0170840600214001.

Egri, C. and S. Herman: 2000, 'Leadership in the North American Environmental Sector: Values, Leadership Styles and Contexts of Environmental Leaders and Their Organizations', *Academy of Management Journal* **43**(4), 571–604. doi:10.2307/1556356.

Florida, R.: 1996, 'Lean and Green: The Move to Environmentally Conscious Manufacturing', *California Management Review* **39**(1), 80–105.

Gardberg, N. A. and C. J. Fombrun: 2006, 'Corporate Citizenship: Creating Intangible Assets Across Institutional Environments', *Academy of Management Review* **31**(2), 329–346.

Garvin, D.: 1991, 'Building a Learning Organization', *Harvard Business Review* **69**(6), 78–91.

Hanna, M. D., W. R. Newman and P. Johnson: 2000, 'Linking Operational and Environmental Improvement Through Employee Involvement', *International Journal of Operations & Production Management* **30**(2), 148–165. doi:10.1108/01443570010304233.

Harris, L. C. and A. Crane: 2002, 'The Greening of Organizational Culture: Managers' Views on the Depth, Degree and Diffusion of Change', *Journal of Organizational Change Management* **15**(3), 214–234. doi:10.1108/09534810210429273.

Hart, S. L.: 1995, 'A Natural-Resource-Based View of the Firm', *Academy of Management Review* **20**(4), 986–1014. doi:10.2307/258963.

Henri, J. F.: 2004, 'Performance Measurement and Organizational Effectiveness: Bridging the Cap', *Managerial Finance* **30**(6), 93–123. doi:10.1108/03074350410769137.

Hoffman, A. J.: 1993, 'The Importance of Fit Between Individual Values and Organisational Culture in the Greening of Industry', *Business Strategy and the Environment* **2**, 10–18. doi:10.1002/bse.3280020402.

Howard-Grenville, J. A.: 2006, 'Inside the Black Box: How Organizational Culture and Subcultures Inform Interpretations and Actions on Environmental Issues', *Organization & Environment* **19**(1), 46–73. doi:10.1177/1086026605285739.

Inkepen, A. C. and A. Dinur: 1998, 'Knowledge Management Process and International Joint Venture', *Organization Science* **9**(4), 454–468.

Jiang, R. J. and P. Bansal: 2003, 'Seeing the Need for ISO 14001', *Journal of Management Studies* **40**(4), 1047–1067. doi:10.1111/1467-6486.00370.

Johansen, D.: 1998, 'Interface Inc: Taking the Lead Toward Sustainability', *Corporate Environmental Strategy* **5**(3), 53–59. doi:10.1016/S1066-7938(00)80100-1.

Jones, G. R. and J. M. George: 1998, 'The Experience and Evolution of Trust: Implications for Cooperation and Teamwork', *Academy of Management Review* **23**, 531–546. doi:10.2307/259293.

Kartz, D.: 1964, 'Motivational Basis of Organizational Behavior', *Behavioral Science* **9**, 131–146. doi:10.1002/bs.3830090206.

Kitazawa, S. and J. Sarkis: 2000, 'The Relationship Between ISO 14001 and Continuous Source Reduction Programs', *International Journal of Operations & Production Management* **20**(2), 225–248. doi:10.1108/01443570010304279.

Kuhnert, K. W. and P. L. Lewis: 1987, 'Transactional and Transformational Leadership: A Constructive/Developmental Analysis', *Academy of Management Review* **12**, 648–657. doi:10.2307/258070.

Lam, A.: 2000, 'Tacit Knowledge, Organizational Learning and Societal Institutions: An Integrated Framework', *Organization Studies* **21**(3), 487–513. doi:10.1177/0170840600213001.

LePine, J. A. and A. Erez: 2002, 'The Nature and Dimensionality of Organizational Citizenship Behavior: A Critical Review and Meta-Analysis', *The Journal of Applied Psychology* **87**(1), 52–65. doi:10.1037/0021-9010.87.1.52.

Michalos, A. C., H. Creech, C. McDonald and P. M. Hatch Kahlke: 2008, 'Knowledge, Attitudes and Behaviours Concerning Education for Sustainable Development: An Exploratory Study', Unpublished.

Morrison, E. W.: 1994, 'Role Definitions and Organizational Citizenship Behavior: The Importance of the Employee's Perspective', *Academy of Management Journal* **37**, 1543–1567. doi:10.2307/256798.

Morrison, E. W. and C. Phelps: 1999, 'Taking Charge: Extra-Role Efforts to Initiate Workplace Change', *Academy of Management Journal* **42**, 403–419. doi:10.2307/257011.

Nonaka, I.: 1994, 'Dynamic Theory of Organizational Knowledge', *Organization Science* **5**(1), 14–37.

Organ, D. W.: 1997, 'Organizational Citizenship Behavior: It's Construct Clean-Up Time', *Human Performance* **10**(2), 85–97. doi:10.1207/s15327043hup1002_2.

Organ, D., P. Podsakoff and S. MacKenzie: 2006, *Organizational Citizenship Behavior: Its Nature, Antecedents, and Consequences* (Sage Publications, Thousand Oaks, CA).

Ostroff, C. and N. Schmitt: 1993, 'Configurations of Organizational Effectiveness and Efficiency', *Academy of Management Journal* **36**(6), 1345–1361. doi:10.2307/256814.

Ouchi, W. G.: 1981, *Theory Z: How American Business can Meet the Japanese Challenge* (Addison-Wesley, Reading, MA).

Paillé, P.: 2006, 'Engagement organisationnel et comportements de citoyenneté organisationnelle (Organizational Commitment and Organizational Citizenship Behaviors)', *Revue de Gestion des Ressources Humaines* **60**, 35–47.

Peloza, J. and D. N. Hassay: 2006, 'Intra-Organizational Volunteerism: Good Soldiers, Good Deeds, and Good Politics', *Journal of Business Ethics* **64**(4), 357–379. doi:10.1007/s10551-005-5496-z.

Podsakoff, P. M., M. Ahearne and S. B. MacKenzie: 1997, 'Organizational Citizenship Behavior and the Quantity and Quality of Workgroup Performance', *The Journal of Applied Psychology* **82**, 262–270. doi:10.1037/0021-9010.82.2.262.

Podsakoff, P. M., S. B. MacKenzie, J. B. Paine and D. G. Bachrach: 2000, 'Organizational Citizenship Behaviors: A Critical Review of the Theoretical and Empirical Literature and Suggestions for Future Research', *Journal of Management* **26**(3), 513–563. doi:10.1177/014920630002600307.

Polanyi, M.: 1962, *Personal Knowledge: Towards a Post-Critical Philosophy* (Harper and Row, New York).

Prahalad, C. and G. Hamel: 1990, 'The Core Competencies of the Corporations', *Harvard Business Review* **68**(3), 79–91.

Purser, R. E., C. Park and A. Montuori: 1995, 'Limits to Anthropocentrism: Toward an Ecocentric Organization Paradigm?', *Academy of Management Review* **20**(4), 1053–1089. doi:10.2307/258965.

Ramus, C. A. and A. B. Killmer: 2007, 'Corporate Greening Through Prosocial Extrarole Behaviours – A Conceptual Framework for Employee Motivation', *Business Strategy and the Environment* **16**(8), 554–570.

Rooke, D. and W. R. Torbert: 2005, 'Transformations of Leadership', *Harvard Business Review* **83**(4), 66–76.

Roy, M. J., O. Boiral and D. Lagacé: 2001, 'Environmental Commitment and Manufacturing Excellence: A Comparative Study Within Canadian Industry', *Business Strategy and the Environment* **10**(5), 257–268. doi:10.1002/bse.304.

Ruiz-Quintanilla, S. A., J. Bunge, A. Freeman-Gallant and E. Cohen-Rosenthal: 1996, 'Employee Participation in Pollution Reduction: A Socio-Technical Perspective', *Business Strategy and the Environment* **5**(3), 137–144. doi:10.1002/(SICI)1099-0836(199609)5:3<137::AID-BSE67>3.0.CO;2-K.

Sharma, S.: 2000, 'Managerial Interpretations and Organizational Context as Predictors of Corporate Choice of Environmental Strategy', *Academy of Management Journal* **43**(4), 681–697. doi:10.2307/1556361.

Shrivastava, P.: 1995, 'The Role of Corporations in Achieving Ecological Sustainability', *Academy of Management Review* **20**(4), 936–960. doi:10.2307/258961.

Springett, D.: 2003, 'Business Conceptions of Sustainable Development: A Perspective from Critical Theory', *Business Strategy and the Environment* **12**(2), 71–86. doi:10.1002/bse.353.

Standards Council of Canada: 2004, *Environmental Management Systems: Requirements with Guidance for Use* (CSA, Mississauga, Canada).

Starik, M. and G. Rands: 1995, 'Weaving an Integrating Web: Multilevel and Multisystem Perspectives of Ecologically Sustainable Organizations', *Academy of Management Review* **20**(4), 908–935. doi:10.2307/258960.

Stead, J. G. and E. W. Stead: 1994, 'Can Humaning Change the Economic Myth? Paradigm Shifts Necessary for Ecologically Sustainable Business', *Journal of Organizational Change Management* **7**(4), 15–31. doi:10.1108/09534819410061351.

Stone, L.: 2000, 'When Case Studies are not Enough: The Influence of Corporate Culture and Employee Attitudes on the Success of Cleaner Production Initiatives', *Journal of Cleaner Production* **8**, 353–359. doi:10.1016/S0959-6526(00)00037-8.

Theyel, G.: 2000, 'Management Practices for Environmental Innovation and Performance', *International Journal of Operations & Production Management* **20**(2), 249–266. doi:10.1108/01443570010304288.

Van Dyne, L., J. W. Graham and R. M. Dienesch: 1994, 'Organizational Citizenship Behavior: Construct Redefinition, Measurement and Validation', *Academy of Management Journal* **37**, 765–802. doi:10.2307/256600.

Walgenbach, P.: 2001, 'The Production of Distrust by Means of Producing Trust', *Organization Studies* **22**(4), 693–714. doi:10.1177/0170840601224006.

Walley, N. and B. Whitehead: 1994, 'It's not Easy Being Green', *Harvard Business Review* **72**(3), 46–52.

Wesley, F. and H. Vredenburg: 1996, 'Sustainability and the Corporation: Criteria for Aligning Economic Practice with Environmental Protection', *Journal of Management Inquiry* **5**(2), 104–119. doi:10.1177/105649269652003.

Winter, G.: 1988, *Business and the Environment: A Handbook of Industrial Ecology* (McGraw-Hill, Hamburg).

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