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Corporate Greening Through ISO 14001: A Rational Myth?

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The process used by organizations to integrate the ISO 14001 standard has not yet been the subject of extensive research in environmental management despite the rapid development of this standard, particularly in industrial companies. The results of a case study conducted among nine ISO 14001 certified Canadian organizations showed that adopting this standard tends to lead to a ceremonial behaviour intended to superficially show that the certified organizations conformed to the standard. Although rigorous compliance with the standard often resulted in real improvements, these improvements were primarily technical and administrative in nature. However, in most of the cases studied, daily practices remained somewhat decoupled from the prescriptions of the ISO 14001 system, of which employees generally had only a vague understanding. The organizations studied adopted different strategies to reconcile external pressures in favour of adopting this standard and internal constraints associated with a management system whose support varied from one case to the next. While the standard often appeared to be some sort of "rational myth" (Meyer and Rowan 1977) to which organizations superficially committed themselves, the adaptation to institutional pressures was not necessarily straightforward. Using the example of the ISO 14001 standard, our study helps to show how this myth can be integrated, transformed, and even created through rhetoric by organizations to resolve certain contradictions. This research also illustrates how adopting the ISO 14001 system can have an ambiguous effect on environmental management practices and performances.

Key words: ISO 14001; rational myths; social legitimacy; organizational hypocrisy; ritual integration; environmental performances

Introduction

Introduced in 1996, the ISO 14001 standard has slowly established itself as the reference model in environmental management. With more than 100,000 companies certified worldwide in 2006, this management system is undergoing rapid growth, particularly in many Asian countries (International Organization for Standardization 2004, Peglau 2006, Corbett and Kirsch 2001, Boiral 2001). Similar to the ISO 9001 quality insurance system launched 10 years earlier, ISO 14001 represents both an internal management tool and a way of publicizing an organization's legitimacy among various stakeholders.

For internal management, the ISO 14001 standard responds to the need to promote a preventive approach and integrate environmental concerns in daily activities. This integration and prevention rationale, which is at the heart of environmental management systems (Kitazawa and Sarkis 2000, Russo and Fouts 1997, Boiral 2002), cannot simply be reduced to technical measures placed under the responsibility of an environmental department. On the contrary, it requires that a management system be implemented and many more people take responsibility for this system. ISO 14001 is supposed to guide and shape this implementation and greater responsibility through a rigorous process.

From the standpoint of external recognition, green certification helps to improve the image of an organization and to demonstrate environmental commitment to clients, public authorities, citizens and ecological groups (Zutshi and Sohal 2004, Bellesi et al. 2005, Bansal and Bogner 2002, Standards Council of Canada 2000, Jiang and Bansal 2003). Although this concern for external recognition is often the reason underlying the adoption of the ISO 14001 system, it is not necessarily related to, or compatible with, objectives of internal efficiency and improved environmental practices. Several studies, either conducted from an institutional perspective or focusing on behaviour analysis within organizations, have shown the loose coupling that exists between structures adopted to ensure organizational legitimacy and the measures actually implemented (Brunsson 1989, Scheid-Cook 1992, Weick 1976). According to Meyer and Rowan (1977), the adoption of formal structures and rational operating standards is not necessarily motivated by a search for efficiency. Rather, the adoption may be indicative of myths and ceremonies not entirely connected with real activities. This superficial adoption of new models aims above all to ensure that organizations comply with the expectations of public authorities and a socioeconomic environment dominated by the rationale of reason.

This critical approach to the adoption of management models perceived to be legitimate and rational has raised questions about the merits and integration of the

ISO 14001 standard in organizations. The purpose of this paper is to analyze both this integration process and the coherence between beliefs regarding ISO 14001 institutional rationale and measures that are actually put into practice. This goal was accomplished through a case study conducted in nine certified organizations. Our results show that, far from making these organizations more homogeneous or "isomorphic" (DiMaggio and Powell 1983), the institutional pressure associated with the implementation of ISO 14001 was interpreted, transformed, and integrated into organizational practices consistent with the different objectives and constraints of each case. The gap between managers' statements and ISO-related behaviour revealed that there were certain myths about the efficiency, relevance, and formal rationality of the implemented system. This study did not attempt to analyze the institutional or commercial origins of these myths, but rather the way in which they were interpreted and managed within the organizations. The analysis of these rational myths regarding ISO 14001 certification contributes to shed light on the paradoxes between external pressures for adopting this standard and its organizational implications, most often occulted by stereotypical discourses and rhetoric of legitimization about the effectiveness of the standard. The study also contributes to questioning the impact of ISO 14001 on practices and environmental performances by showing different strategies adopted by organizations to integrate, often superficially, standard requirements.

This paper will first attempt to demonstrate, based on a literature review, how the ISO 14001 standard can represent a "rational myth" (Meyer and Rowan 1977). The methodology of the present research will then be presented. Finally, the results analysis will focus on the main paradoxes that arise with the emergence of rational myths in organizations, namely, contradictions between the legitimacy of the rational models and their efficiency, the illusive and ceremonial conformity to these models, and integration strategies used by the organizations.

Green Certification: From Institutional Legitimacy to Rational Practices

The dissemination of new practices in organizations in search of legitimacy and recognition from various stakeholders has been the subject of growing interest in organizational theory. Numerous studies on this theme have been conducted from an institutional perspective. This perspective attempts to analyze the pressures and changes that cause organizations to become more isomorphic (DiMaggio and Powell 1983) by adopting similar practices deemed to be legitimate (Dacin et al. 2002, Kostova and Roth 2002). Seen from this perspective, rational structures and practices such as the ISO 14001 system tend to be introduced more by reason of social legitimacy than for a real concern for efficiency (Meyer and Rowan 1977, DiMaggio and Powell 1983). According to Meyer and Rowan (1977), conformity to standards dictated by the institutional environment is apparent and superficial. This conformity stems primarily from a rational myth that is loosely associated with a company's practices and takes form when formal structures are adopted to ceremoniously reproduce social standards dominated by the rising overemphasis on rationality.

In the case of ISO 14001, despite the existence of external pressures, a supposedly rigorous certification process, and very formally defined prescriptions, organizations seem to have considerable margin for manoeuvre in the way they actually integrate the standard requirements (Kitazawa and Sarkis 2000; Boiral 1998, 2001). This internal margin for manoeuvre is likely to encourage the development of ceremonial behaviour and a superficial conformity that transforms the standard into an organizational myth rather than a genuine tool for improving environmental management. The concept of a rational myth refers to the rupture between the reassuring image of rationality, formalism, and intellectual rigour that an organization attempts to project by adopting somewhat superficial structures and systems perceived as legitimate on the one hand, and the organization's real practices on the other hand (Meyer and Rowan 1977, Mizruchi and Fein 1999, Townley 2002, Boiral 2003). From this standpoint, the ISO 14001 system can be viewed as a formal structure only loosely connected with real activities and implemented to provide a rational and legitimate image of an organization's environmental management.

Nonetheless, the emergence and integration of rational myths in organizations has not yet been the subject of much study (Townley 2002, Scheid-Cook 1992), particularly concerning ISO standards and environmental management. As Townley stated, "one area that has not received much attention is the nature of the rationalized concepts and myths themselves, the institutional requirements to which individuals in organizations are obliged to respond" (Townley 2002, p. 163). However, the paradoxical relationship between an organization's real practices and the somewhat superficial adoption of management models and ideologies motivated by the desire for social legitimacy has been underlined by various studies not necessarily conducted from an institutional perspective.

Brunsson (1989), for example, has demonstrated the contradictions between the political sphere bent on ensuring the social legitimacy of organizations and meeting the various regulatory requirements, and the action-oriented sphere dominated by the desire for efficiency. These contradictions between political and practical aspects are the source of an organizational hypocrisy expressed in apparently coherent and legitimate statements, ideas, and rule systems that are loosely coupled with real activities. This lack of coherence between

an organization's projected legitimacy and its actions concurs with Weick's (1976) observations about the loose coupling between the formal system of educational sector organizations and their somewhat chaotic daily practices. This approach was also adopted in March's (1989) study highlighting the ritualistic, symbolic, and political aspects of decision making, which is often loosely associated with actions. According to Scheid-Cook (1992), institutional theory has used an overly functionalist approach to examine the ritualistic and symbolic aspects underlying rational myths, particularly with respect to isomorphism, which assumes that normative pressures are relatively objective. Employing Weick's (1979) concept of enactment, Scheid-Cook showed, on the contrary, how emerging rational myths and ritual conformity to institutional demands are constructed, interpreted, and even manipulated by members of organizations. This social construction of institutional constraints and rational myths can be accomplished through language games that reflect a certain social and historical context rather than the product of an observable empirical reality (Astley and Zammuto 1992, Mauws and Phillips 1995). These language games contribute to the diffusion of managerial fashions through discourses intended to foster the rationality and legitimacy of new practices and structures (Abrahamson 1991, 1996; Green 2004).

Thus, in a case study of the adoption of total quality programs in five organizations, Zbaracki (1998) showed the dissociation between the technical reality of these programs and the managers' rhetoric of success. This rhetoric is motivated primarily by a desire for legitimacy in the face of institutional pressures shaping language games and ceremonial statements touting the virtues of total quality. These language games help to artificially homogenize viewpoints and offer a more rational appearance to the practices within an organization. Indeed, organizations have a tendency to limit the expression of diverging or paradoxical opinions about a given subject to reinforce their cohesion and legitimacy and create a more coherent image for themselves (Morrison and Milliken 2000, Glynn et al. 2000, Lewis 2000). Contradictions between this image of legitimacy, which is projected outside organizations, and the actual perceptions of employees were emphasized in a study conducted outside the workplace among some 50 individuals working in ISO 9000 certified organizations (Boiral 2003). This study revealed the employees' often critical viewpoints concerning the usefulness of ISO 9000 and showed that about two-thirds of interviewees were ceremonial integrators or dissidents regarding implementation of the standard. Nevertheless, by focusing on individuals outside the workplace, this approach did not allow investigation of the construction of rational myths inside organizations and the way in which ISO 9000 certification impacts performances or internal practices.

These different investigations shed light on how management systems motivated by the desire for institutional legitimacy can be interpreted and integrated within organizations. The implementation of the ISO 14001 environmental management system in organizations provides a fertile ground for observing the paradoxes of this integration process. Indeed, the institutional pressure and formal rationality that underlie the development of ISO management standards tend to foster the emergence of rational myths loosely associated with real practices.

First, numerous studies have shown that the environmental initiatives of companies stem, for the most part, from regulatory, commercial, and institutional pressures that organizations ignore at the peril of undermining their legitimacy and even their survival (Rugman and Verbeke 1998, Bansal and Roth 2000, Hoffman 1999, King and Lenox 2000, Jiang and Bansal 2003). Faced with these pressures, the environmental commitment of organizations is often described as a reactive or proactive response, depending on green awareness, the intensity of the external constraints, or the development of specific abilities in this field (McKay 2001, Sharma 2000, Sharma and Vredenburg 1998, Hart 1995). In this context, obtaining certification can help to improve an organization's image, defend the legitimacy of its activities, and foster greater confidence on the part of stakeholders (Zutshi and Sohal 2004, Bellesi et al. 2005, Bansal and Bogner 2002, Corbett and Cutler 2000, Delmas 2001). These social and marketing benefits are not incompatible with ethical motivations that rank among the main drivers of ISO 14001 certification (González-Benito and González-Benito 2005, Bansal and Roth 2000). Moreover, considering regulatory constraints and committing to the principle of continuous improvement, as proposed in the ISO 14001 system, favours a voluntary and proactive approach that encourages the "self-regulation" of organizations (Welch et al. 2002, 2003; Potoski and Prakash 2005; King and Lenox 2000), while helping to give environmental actions greater external visibility (Jiang and Bansal 2003). However, the conformity of certified organizations can also be expressed by more bureaucracy that hinders efficient management practices. Moreover, certain critical approaches maintain that the environmental management of organizations is increasingly dominated by bureaucratic and "amoral" processes (Crane 2000) that avoid serious questions that companies must ask when reviewing their main ecological problems (Levy 1997). This coexistence of rational management systems perceived as legitimate and the insufficient environmental commitment that ensues are indicative of a form of organizational hypocrisy (Brunsson 1989) more concerned with appearances than real change.

Second, ISO certification is essentially based on the implementation of a formalized management system implicitly considered to be the right way of doing things,

the company's conformance being approved by a certification audit conducted by an external organization (Zutshi and Sohal 2004, Boiral 1998). Thus the isomorphism process would seem to be inherent to the ISO rationale, which, by definition, presupposes a formal and institutional frame of reference. The acronym ISO refers to the Greek word isos, meaning that which is similar or identical to a reference model, in this case, the standards developed by the International Organization for Standardization. The fact that numerous experts and institutions from various countries have participated in the creation of these standards tends to reinforce their international legitimacy (Bansal and Bogner 2002; Boiral 1998, 2001). Whatever the country, context, or organization, the same trademark can be seen, transcending borders and cultures. However, confidence in these standards is not shared universally. In a study of ISO 9000 certification conducted among the quality managers of some 40 German organizations, Walgenbach (2001) showed that these managers did not have a precise and clear perception of the certification's commercial advantages. The lack of confidence in the auditors, certification process, and internal improvements stemming from the implementation of the standard explains, to a large extent, reservations expressed about these standards. The quality managers interviewed by Walgenbach pointed out that the ISO 9000 certification sometimes led to genuine improvements in their organizations, particularly in terms of clearer processes, better-structured practices, and better knowledge management. Nonetheless, benefits noted had less to do with concrete performance or behaviour than with administrative and procedural aspects.

The importance granted to these formal aspects of ISO standards by numerous organizations reflects the overemphasis on rationality that Meyer and Rowan (1977) denounced. The ISO 9000 and ISO 14001 systems project an image of rigour, objectivity, precision, and control borrowed from the exact sciences. This image of rationality helps legitimize the use of these standards by conferring a scientific appearance to practices based, in reality, on organizational behaviour, which, numerous commentators have observed, is unpredictable, impervious to official statements, and not entirely rational (Brunsson 1989; March 1989; Weick 1976, 1979; Scheid-Cook 1992). In ISO 14001, this behaviour is considered in a very prescriptive and procedural way, as a sort of "managerial technology" (Mouritsen et al. 2000) that is both efficient and objective.

This managerial technology reflects the scientific ideal of rationalizing and quantifying social phenomena (Porter 1996). The principle of "we say what we do and do what we say," which is at the heart of the ISO 9000 and ISO 14001 implementation processes, is quite indicative of this rationalist and positivist conception of management (Mispelblom 1995; Boiral 1998, 2003). Although the documentation required by these standards engenders a certain measure of rigour, it can also provoke the creation of what Weber (1968, 1958) referred to as an "iron cage," making an organization more rigid and bureaucratic (Mispelblom 1995, Seddon 1997, Boiral 2003, Zutshi and Sohal 2004). The rapid development of the ISO 9000 and 14001 standards has contributed to the rationalization and bureaucratization of organizations, a process that Weber considered to be one of the dominant tendencies of industrialized societies. According to DiMaggio and Powell (1983), this process is at the very heart of the isomorphism phenomenon, even though it does not necessarily make organizations more efficient.

The rational myths that emerge as a result of the decoupling that occurs between the search for institutional legitimacy through ISO 14001 certification and the resulting internal efficiency seems all the more likely, as studies of this management system have not been able to prove its effectiveness. Indeed, relatively few studies have examined and demonstrated the impact of ISO 14001 on environmental performances. Much research has focused instead on a profile analysis of certified companies (International Organization for Standardization 2001, Corbett and Kirsch 2001) on reasons for implementing ISO 14001 (Standards Council of Canada 2000, Welch et al. 2002, González-Benito and González-Benito 2005), and on its impact on competitiveness and marketing aspects or quality management (Rao and Holt 2005, Corbett and Cutler 2000, Delmas 2001, Bellesi et al. 2005, Pun and Hui 2001, Zutshi and Sohal 2004). The few studies assessing the environmental impact of ISO 14001 have yielded contrasting results. Some have concluded that ISO 14001 certification tends to improve environmental performance (Melnyk et al. 2003, Pun and Hui 2001, Goh Eng et al. 2006) or to strengthen organizations' regulatory compliance (Potoski and Prakash 2005, Kwon et al. 2002). Other studies have questioned the effectiveness of the standard and its impact on environmental performance (Barla 2005, Andrews and Amaral 2003, Welch et al. 2003, Boiral and Sala 1998). As stressed by Welch et al. (2002, 2003), the positive relationship between the adoption of ISO 14001 and environmental performance may result from the propensity of greener organizations to be more likely to adopt this standard than other organizations. From this standpoint, irrespective of the real impacts of ISO 14001 certification, organizations may be tempted to use this standard mainly as a tool to publicize their environmental responsiveness through rhetoric and marketing actions.

Nevertheless, most studies on the impact of ISO 14001 are based on quantitative research and are focused on managers' attitudes. This approach makes it difficult to delve deeper into the actual integration of the standard in organizations and may reflect the inclination

of managers to present a positive and coherent view of management practices, while avoiding disclosure of their contradictions and pitfalls (Morrison and Milliken 2000, Glynn et al. 2000, Zbaracki 1998). The few qualitative studies of the implementation of ISO 14001 have highlighted the importance of getting employees to participate in the continuous improvement process (Kitazawa and Sarkis 2000), the bureaucratic nature of certification (Boiral and Sala 1998), the role of the standard in coordinating environmental activities (Reverdy 2000), and the external pressure that leads managers to adopt this system in certain activity sectors (Jiang and Bansal 2003).

These studies have led to a better understanding of the motivations and strategic issues related to the implementation of the ISO 14001 system. Nonetheless, they have not determined to what extent this standard represents a rational myth or how this myth, if it does exist, is managed within certified organizations. A case study was therefore conducted on nine ISO 14001 certified Canadian factories to analyze the phenomenon.

Methods

The goal of this study was to determine to what extent ISO 14001 could be considered a rational myth in these certified organizations, whether these organizations had actually integrated the requirements of the standard into their daily activities, and how individuals perceived the ensuing changes. This study did not examine the external institutional factors that led to the adoption of the standard. Rather, it focused on analyzing the internal perceptions of its legitimacy, the coherence between the formal rationality of the system and implemented practices, and the somewhat ceremonial way in which organizations managed the eventual contradictions between institutional certification objectives and employee commitment to this system. Thus, the study took a qualitative approach that considered several dimensions related to the implementation of the standard, namely: integration of institutional pressures in organizations, the connection between standard requirements and daily management, effect on practices, strategies for adaptation and resistance, etc.

The case study method was deemed the best way to analyze these different dimensions. Indeed, this method helps to place research results in an organizational context and analyze them from different angles (Eisenhardt 1989, Yin 1984). The case method can also be used to analyze complex organizational phenomena from a qualitative perspective (Yin 1981, Eisenhardt and Bourgeois 1988). Finally, by considering several cases, it is possible to compare and validate ideas or inferences arising from the analysis of each case. This comparison and inference process helps to develop new theories and explore new ideas using an inductive approach (Yin 1984, Bansal and Roth 2000, Zbaracki 1998). Grounded theory provides a relevant analytical framework for this inductive approach. The framework is based on a systematic process for categorizing and grouping qualitative data that makes it easier to interpret different opinions and perspectives on the same theme (Glaser and Strauss 1967, Strauss and Corbin 1990). This framework is particularly well adapted to qualitative analyses of interview transcriptions or verbatim. Thus, the analytical process is resolutely anchored in the reality of the study field, making it possible to structure the inductive interpretation of empirical data.

Case Selection

Contrary to statistical studies, the case method does not require a random or representative sample of a population (Bansal and Roth 2000). Instead, the limited number of organizations studied and the diversity of the collected data facilitate the selective choosing of cases so as to enrich our understanding of a question and confront certain theories (Eisenhardt 1989, Pettigrew 1990). Although the external validity of this method is limited, generalizing the results is not the primary objective of this approach (Maxwell 1996, Leonard-Barton 1990, Eisenhardt 1989). In this study, the population consisted of ISO 14001 certified Canadian organizations. In July 2003, this population was composed of approximately 1,100 industrial sites (Peglau 2006). However, to ensure that data collected reflected genuine experience rather than a priori judgments about the standard, only organizations that had been certified for two years or more were considered. These organizations were identified and contacted using a list compiled by certification organizations that indicated the certification date.

The study was limited to a total of nine cases. Even though it would have been possible to increase the sample size, it became evident during the study that there were fewer and fewer new ideas and issues emerging from the field. This phenomenon of "theoretical saturation" (Glaser and Strauss 1967) suggested that there was enough data collected in the nine cases to meet research objectives. These cases were chosen so as to obtain the most representative profile possible of certified Canadian organizations. These organizations were, for the most part, subsidiaries of large companies. Indeed, as was shown in a study conducted in 2000, Canadian organizations that adopted the ISO 14001 system in the three or four years following its introduction were almost exclusively large companies from the manufacturing sector (Standards Council of Canada 2000). Nonetheless, because the standard is usually implemented at the local level, the cases studied in the present research involved factories rather than industrial groups or head offices.

Table 1 summarizes the profile of the case studies. For reasons of confidentiality, the names of the organizations or the groups to which they belong are not indicated.

Table 1 General Profile of the Case Studies

Cases	Activity sector	Number of employees	Year of certification	Main environmental problems	Interviews performed			
					Environment specialists	Employees	Managers	Total
1	Intercity bus manufacturing	950	1999	Volatile organic compound emissions, water consumption, oil spills	2	3	5	10
2	Aluminium production	540	1998	Energy consumption, emissions of fluorides and dust, proximity of the factory to a large urban centre	3	3	4	10
3	Automobile parts production	180	2000	Same as in Case 1	1	4	2	7
4	Magnesium production	350	2000	Discharge of hydrochloric acid and magnesium chloride, emissions of potent greenhouse gas, especially the SF6	3	2	2	7
5	Pulp and paper	450	2000	Discharges of biological oxygen demand, total suspended solids, water consumption, accidental spills	2	4	2	8
6	Pulp and paper	1,250	2001	Same as in Case 5	3	3	4	10
7	Pulp and paper	1,200	2000	Same as in Cases 5 and 6	3	3	4	10
8	Lumber	330	1999	Wood transportation, accidental spills, storage of hydrocarbons, wood residues	2	3	3	8
9	Mining	460	2000	Mineral residues, cyanide discharge, water contamination, soil contamination	2	5	5	12

Data Collection

For the most part, data collection was based on site visits, individual interviews, and internal documents concerning environmental management systems. A guided tour of the certified installations was first set up with the environmental department manager. This tour often proved indispensable to understanding the main environmental aspects that the ISO 14001 standard defines as "elements of an organization's activities, products or services which can interact with the environment," (Standards Council of Canada 2004, p. 2). Knowledge of these aspects allowed us to put the organizations' environmental programs into context, as well as the statements of persons interviewed. This visit was generally followed by a fairly substantial semidirected interview with the environmental department manager. This first interview lasted two hours on average.

Interviews were then conducted with individuals who were directly involved in environmental management within the organization or in the implementation of the ISO 14001 system. In most of the organizations, we met with all the environmental department specialists, except those in the large factories, such as in Cases 6 and 7, where there were 10 or more people in the department. In smaller organizations, such as Case 3, only one or two people were directly in charge of environmental questions. Likewise, other managers or employees who were involved in the implementation of ISO 14001 or the environmental committees were met during this phase of the study. These semidirected interviews lasted, on average, 1–1.5 hours. Finally, interviews were held with employees and managers not directly or indirectly involved with this department.

In all, 21 environmental department specialists, 30 employees, and 31 managers were interviewed (see Table 2). Almost all employees interviewed were production operators. The managers interviewed were middle and senior managers, mostly from the production department: production supervisors, quality directors, the chief engineer, etc. No company presidents were met. The respondent distribution prevented focusing only on people directly in charge of ISO 14001, and allowed a better investigation of the extent to which this management system was integrated into organizational practices. Thus, about 36% of all interviewees were actively involved in the ISO 14001 implementation process, 29% played a secondary role in the process, and 35%, mostly employees, were not involved at all.

The questions asked during interviews primarily followed two lines of thought on which are based most of the current ideas about the emergence of rational myths and the paradox between justifying statements and genuine actions:

- The first line of thought focuses on the social legitimacy and apparent rationality of the implemented management system. Accordingly, the questions pertained to institutional or commercial motivations for the implementation, official statements, marketing and political

Table 2 Display of Evidence from the Cases Studied in Relation to Key Issues

Key subthemes	Number of categories	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Case 9
Internal motivations	7	*	**	*	***	**	*	***	***	*
External motivations	5	**	***	**	*	***	***	***	***	***
Resources and managers' support	8	*	***	*	***	***	**	***	***	**
Employee commitment	6	*	*	*	***	*	*	***	***	*
Implementation difficulties	5	***	**	***	*	**	**	*	*	**
Practice improvements	5	*	**	*	**	*	**	**	***	*
ISO impacts on performance	5	*	*	*	*	*	*	*	**	*

Notes. Amount of evidences from case studies: * = low; ** = moderate; *** = strong.

aspects, intrinsic rationality, and coherence of the ISO 14001 prescriptions, formal and document organization of the system;

• The second line concerns the effective application of the ISO 14001 system and its internal efficiency. Thus the questions dealt with the integration of the standard into daily practices, organizational conformity, the actual auditing process, behavioural changes, employee participation in system implementation, employee knowledge of, and commitment to, the standard and the impact of the certification on environmental performance.

These two types of questions were alternated; the goal being to highlight paradoxes capable of revealing rational myths; namely, contradictions between official statements and real practices, the ceremonial aspects of the auditing, a poor understanding of the system by managers and employees, and uncertain efficiency of the standard. The interviews were recorded and then retranscribed verbatim with a word processor. The recordings were conducted anonymously. In all, 82 retranscribed interviews were held (see Table 1).

Data Analysis

Data analysis was conducted by grouping and comparing several sources of information, including interview transcriptions, documents for the environmental management system, environmental performance data, and notes from the site tour. However, the written transcription was the main data source. The analysis process was conducted by categorizing, grouping, and comparing information based on concepts and themes that emerged from the interpretation of results. To facilitate the categorization process, which is the cornerstone of grounded theory (Glaser and Strauss 1967, Strauss and Corbin 1990, Miles and Huberman 1994), QSR Nvivo qualitative analysis software was used. Close to 60 themes were identified using the interview guides, ISO 14001 prescriptions, and the study objectives. These themes, or categories, were then enlarged, regrouped, and modified in keeping with the ideas emerging from the data interpretation. Passages in the interview transcriptions were then compared to the already established or emerging categories. As suggested by Miles and Huberman (1994), codes were established from the research questions and from the issues emerging from the data analysis. For example, during the data collection process, it appeared that many respondents have a very vague understanding of the ISO 14001 system. Thus, to better capture and analyze this issue, a new category named *knowledge of ISO 14001* was created. The qualitative-analysis software used made this process of creating new categories according to empirical data easier. Creating such categories is an essential aspect of the grounded-theory methodological approach (Strauss and Corbin 1990, Miles and Huberman 1994).

The reliability of the qualitative data categorization process has been debated by some authors (Miles and Huberman 1994, Neuendorf 2002, Morse et al. 2002). The involvement of various coders and the definition of verification strategies to improve intercoder reliability have become key issues of these debates. Even if most discussions on intercoder reliability are related to content analysis research, this issue may also be relevant for grounded theory and qualitative analysis methods involving various coders. In all, three people, including two coders, participated in the categorization process of this study. To ensure and improve the intercoder reliability, various measures were implemented. First, following the suggestion of Miles and Huberman (1994), a detailed description of the meaning of each category was drawn up to facilitate data segmentation and interpretation. This description helped the two main coders in their data analysis and contributed to standardizing the coding process. Each new category was discussed with the coders and was detailed precisely. Second, the coders were trained and contributed to one or two case studies, participating in interviews during the data collection process. This participation in data collection helped the coders to improve their knowledge of the subject as well as the categories used. Third, the two coders were asked to blindly code the transcriptions of four interviews using the same categorization grid. These four interviews were chosen randomly from the 82 retranscribed interviews. The intercoder reliability was analyzed by comparing the coding judgments of the two coders concerning the categorization of the four randomly selected interviews. In all, 352 encoding passages were performed by the first coder. The second coder agreed on 271 of 352

encoding passages. Thus, the level of agreement between the two coders was 77%, an acceptable reliability rate (Neuendorf 2002). A 0.70 score was obtained by using Scott's (1955) pi (π) test to correct any intercoder agreement that may be because of chance in nominal scale coding. This test, frequently used for content analysis, appeared sufficient to support the reliability and coherence of the categorization process of the study. The analysis of intercoder reliability also contributed to improving the definition of some categories and better standardizing the coding process. Fourth, the categorization of interviews was double-checked to reinforce the reliability of the encoding process and complete some categorizations. The fact that only minor changes were made after this verification process confirmed that the coherence between the categories and the data segmentation was good. Most of these minor changes concerned the exact length of each coded segment and, to a lesser degree, the possible use of additional categories to characterize the same passage.

At the end of this iterative segmentation, data analysis, and verification process, more than 7,500 interview passages were encoded using the QSR NVivo software. The encoded passages were structured within a hierarchy of concepts and issues comprised of five general themes (respondent's position, reasons for implementing the standard, application of the main ISO 14001 prescriptions, implementation process, standard's general implications), 13 subthemes, and 64 categories. To analyze the extent to which ISO 14001 may be considered as a rational myth, data interpretation was more specifically focused on seven subthemes representing the key issues of the research question: internal motivations underlying the adoption of ISO 14001, external motivations and pressures, resources and managerial commitment in support of the system, employee commitment, implementation difficulties, practice improvements, and the impact of ISO 14001 on main environmental performances indicators. These subthemes were characterized by five to eight categories (see Table 2). For example, the issue of employee commitment was analyzed through the following categories: consultation, mobilization, training, knowledge of ISO 14001, management philosophy, and others aspects.

Organizational Rationality and Environmental Efficiency

The internal perceptions of institutional legitimacy and the reasons for implementing the standard seemed to indicate that the stakeholders who were usually associated with organizations' environmental problems (governments, environmental groups, ecological associations, banks, insurance companies, competitors) played a fairly secondary or indirect role in the implementation of the standard. Despite the existence of severe regulatory constraints and sometimes tense relationships with some environmental groups, these external pressures were rarely mentioned by the respondents to explain the reasons. Indeed, in most of the factories we visited, the strongest pressure to adopt the standard did not come from traditional external actors, but rather from the organizations' head offices. In response to the open-ended question about the main reasons for implementing ISO 14001, most of the managers and environmental department specialists spontaneously answered that it was at the request of the head office. With the exception of Case 4, obtaining ISO 14001 certification did not appear to be motivated by reasons originating within the factories, but rather from a request or some corporate incentive to which the companies quickly conformed. This result does not necessarily mean that traditional stakeholders such as ecological groups, governments, and citizens have not played a significant role at the head office level in its decision to promote ISO 14001 inside the organizations studied. Indeed, the head office may have acted as a type of relay between stakeholders and the production sites. Nevertheless, this role of relay was not directly mentioned by respondents.

The key role of corporate pressure may be explained by the fact that, like most Canadian organizations certified before 2000–2001 (Standards Council of Canada 2000), all the cases studied here belonged to industrial groups that had decided to promote the use of ISO 14001 in their subsidiaries. In certain organizations, in particular Cases 2 and 9, where the environmental impacts were especially noticeable, a concern for public image was also often mentioned. However, the role of certification seemed to be fairly symbolic, because several respondents acknowledged that the public does not generally know what ISO 14001 implies and no explicit requests for its adoption were made by the public. However, this type of request tended to come from commercial interests. Although apparently no clients had made ISO 14001 certification a prerequisite for obtaining new contracts, a large majority of the respondents considered that certification represented an immediate marketing advantage, especially on international markets.

Other motivations were also mentioned by respondents, such as developing a competitive advantage, improving environmental performance, or satisfying employees. However, these types of statements were less numerous and rarely supported. Although internal aspects, in particular the control of environmental practices, were mentioned by nearly half the respondents to emphasize the expected or observed advantages of the certification process, with the exception of Case 4, they did not represent the elements that triggered this process. It is clear from the respondents' statements that the reasons underlying the implementation of the standard were essentially institutional pressure from the head office and, less directly, from certain stakeholders.

While the internal benefits resulting from the implementation of the standard were not absent from the respondents' statements, these benefits gave rise to contrasting views. In fact, these benefits were raised by persons from the environmental department in particular. These environmental department specialists, who accounted for some 25% of interviewees, felt that ISO 14001 certification had made it easier to promote environmental concerns among employees and management. First, the standard's rationale of integration, greater responsibility, and prevention gave new legitimacy to contaminant reduction programs. The development and implementation of this program did not solely depend on the technical services department whose control over daily activities resulting in contaminant discharge was quite relative. This program was now integrated into a larger management system that explicitly and rationally defined everyone's responsibilities. Secondly, the system's regular audit and control procedures tended to reinforce the monitoring and credibility of the system, particularly among the production employees who did not have much contact with the environmental department. Finally, ISO 14001 certification assumes that a company's upper management has made an active environmental commitment, thereby facilitating and legitimizing requests for resources needed to attain the objectives laid down in the standard. Thus, implementation of ISO 14001 represented, within and outside organizations, a sort of legitimization instrument intended to obtain more resources and awareness. These advantages, stressed by about 60% of environmental department specialists, were confirmed by some managers and employees:

> Before we implemented the standard, there were two or three people in charge of environmental issues, but the executive committee rarely examined these issues. Now, when there's a problem, the executive committee looks into it. It insures that there's going to be some monitoring. (Manager, Case 7)

> There's less tolerance for negligent behaviour. With ISO 14001, people are more aware of their environmental responsibilities. (Employee, Case 2)

This instrument for legitimizing and heightening people's awareness of environmental issues made it possible to improve certain practices. These improvements varied according to the organizations. For example, respondents in Case 1 noted better management discharge. In Cases 3, 4, and 9, contingency plans and risk management procedures were improved through the introduction of the standard. Likewise, a clearer understanding of environmental issues was mentioned, in particular, in Cases 2, 4, and 9. In Cases 6 and 7, the implementation of ISO 14001 made it possible to reduce delays in responses to complaints or information requests from the public by introducing a specific procedure for this problem. Finally, the standard would seem to have contributed to better employee communication and training, particularly in Cases 7 and 8. Generally speaking, ISO 14001 helped to correct certain deficiencies and, above all, to create a more rigorous environmental management system. These improvements were emphasized mostly by managers and environmental department specialists:

> I think the standard really made it possible to bring our environmental files up to date. It also gave us the chance to talk more about the environment and improve our environmental management system overall. (Environmental Department Manager, Case 2)

> We already had an environmental management system that was working really well. But ISO 14001 made our programs more rigorous. (Environmental Specialist, Case 4)

These statements confirm that implementing the standard contributed to making environmental management more rational. The systematic and formalist nature of ISO 14001 resulted in a better readability and monitoring of green activities. These activities were now documented and structured in a formal framework that was easier to verify, both from within and outside the companies. This formal framework is intended to represent, in document form, a replica of real or ideal environmental management practices. Computerizing the documentation tended to reinforce the feeling of controlling the process, especially among people in charge of the environmental department. All organizations, with the exception of Case 5, computerized their ISO 14001 environmental management system, thereby obtaining quicker and more flexible access to information.

Despite these endeavours to computerize documentation and clarify procedures, the ISO 14001 standard was perceived by about two-thirds of employees interviewed as a fairly cumbersome and bureaucratic system. First, the implementation process is essentially based on the creation and updating of documentation whose practical utility was not always obvious to employees. Secondly, having an organization certified presupposes costs that were not always viewed as productive investments, particularly in times of economic difficulty. These criticisms about the costs and cumbersomeness of the standard were particularly frequent in Cases 1, 2, 3, and 5:

> There's a lot of documentation for nothing, because, when the auditors come, we obviously have to prove to them that we're doing something. (Manager, Case 1)

> It's true that there's a lot of paperwork. That's how the people here see ISO 14001. When our employees think about ISO, the first thing they think about is paperwork. (Environmental Manager, Case 5)

Thus, the perception that the ISO 14001 system was useful and relevant was far from unanimous. The same comment applies to the standard's effect on environmental performance improvement. Even though nearly

60% of all respondents considered these effects to be positive, few were able to give precise and convincing examples. Generally speaking, the answers to these questions were evasive, and more akin to statements of principle or interview-related optimism rarely supported by facts. In spite of specific and even insistent questions on environmental performance indicators and evidence supporting ISO 14001 efficiency, more than half of the interviewees limited their answers to general statements about the advantages of this management system:

> I don't have specific examples to mention, but ISO 14001 has made people more involved. (Environmental Specialist, Case 4)

> I would say that, yes, there were improvements of performances. Because with ISO certification, things are more under control and we have to perform audits. (Environmental Specialist, Case 5)

> I think there have been improvements of environmental performances because we have now a policy intended to prevent waste, pollution, health, and security, and this is good for our image. (Manager, Case 8)

> Yes, things should have improved, but it is not clear to me to what extent. (Manager, Case 6)

These statements showed both the ambivalence of respondents concerning environmental performance improvements and the tendency to defend the usefulness of the standard. Questioning ISO 14001 efficiency would have compromised its legitimacy, turning it into some type of public relations certificate. Indeed, the organizations in our study generally displayed some pride regarding their certification, especially because they were among the first in Canada to be certified. Nonetheless, the data on main environmental performance indicators that was systematically gathered within each organization showed no conclusive improvements following the ISO 14001 certification. While there was some genuine progress in certain organizations, it would be difficult to relate this progress to the implementation of the standard.

Thus, in Case 1, several environmental department specialists and managers suggested that a reduction in accidental spills, certain types of waste, and energy consumption demonstrated that the ISO 14001 system was efficient. Upon verification, however, the data in question turned out to be related to a reduction in factory activities following a period of economic difficulty.

In Case 2, even though all environmental department specialists and some managers maintained that ISO 14001 certification helped reduce environmental impacts, the data obtained indicated the contrary. Indeed, the main environmental indicators used in this industry—namely, fluorides, dust, and policyclic aromatic hydrocarbons (PAHs)—had clearly increased since the factory was certified, whereas they had decreased in the preceding years. Because these emissions were calculated by tons of aluminum produced, their increase could not be explained by variations in production volume. No explanations for these contradictions could be obtained from the managers or environmental department specialists.

In Case 3, we observed no significant improvement of the main environmental performance indicators such as volatile organic compound emissions, water consumption, and oil spills since the adoption of ISO 14001.

In Case 4, we observed an improvement in most of the environmental performance indicators, such as the emissions of two major greenhouse gases, sulphur hexafluoride (SF6) and magnesium carbonate (MGCO3). Discharges of hydrochloric acid (HCl) were also significantly reduced. However, an analysis of the indicators over a longer period showed that these improvements were fairly constant over the last five years and were not attributable to the implementation of the standard.

In Cases 5, 6, and 7, some improvements concerning noise reduction, recycling programs, and energy consumption were observed. Nevertheless, these improvements were loosely coupled with the main environmental issues of water contamination, water consumption, dangerous waste, and accidental spills. Moreover, most of these improvements were related to programs launched before ISO 14001 certification. Thus, adoption of the standard alone did not lead to measurable improvements. These observations were consistent with Barla's (2005) study that demonstrated (using quantitative data collected from 37 of Quebec's pulp and paper plants that adopted ISO 14001) that no significant improvements to environmental performance resulted from certification. The study performed by Barla also showed that plants not having adopted ISO 14001 experienced even better environmental performance than certified plants for two major indicators: total suspended solids and discharges of biological oxygen demand.

In Case 8, the consumption of chemical products was reduced by 73% following ISO 14001 certification. Water contamination was also reduced and allowed the cutting of water treatment costs by about 50%. These improvements were related to programs implemented with the ISO 14001 system. Nevertheless, such as in the other cases studied, main environmental issues such as wood transportation, accidental spills, storage of hydrocarbons, and wood residues did not show clear signs of improvement resulting from ISO 14001 certification.

In Case 9, water consumption decreased following ISO 14001 certification. Nevertheless, we observed no significant improvement of the main environmental performance indicators such as mineral residues, cyanide discharges, water contamination, and soil contamination.

To justify the lack of proof of genuine progress resulting from certification, about 20% of the respondents, especially environmental department specialists, indicated that the effects of adopting ISO 14001 would be seen in the long term. However, more than a third of the

people interviewed expressed serious reservations about this subject, considering that a certified organization did not necessarily pollute less than a noncertified one:

> I sincerely believe that it's not because a company is certified ISO 14001 that there will be environmental improvements. As far as I'm concerned, there's no connection. On the other hand, since the standard is recognized by a large majority of our clients and people in our industry, we at least have to try to "show off" our environmental system management. (Manager, Case 2)

> I'd have a hard time believing someone who said that they had obtained extraordinary results by implementing the ISO 14001 system. ... In my opinion, ISO 14001 doesn't help to control the pollution level. Your factory can be a big polluter and still be certified. (Environmental Manager, Case 4)

> I don't think we're able to see whether or not there have been any improvements. Perhaps we'll see some in the long term. But the fact of being certified doesn't necessarily mean better environmental performance. (Environmental Manager, Case 6)

These reservations concerning the effectiveness of the standard and the institutional pressures driving its implementation seem to give credence to the adoption of ISO 14001 as a rational myth intended to foster organizational legitimacy. Nevertheless, the intensity of this rational myth, its integration inside organizations, and its meaning for employees can vary significantly from one case to another. Following the Sutton (1987) model of cross-site display of evidence, Table 2 portrays the amount of support for the main themes of the study, depending on the evidence obtained from case analysis. This Table 2 matrix provides a global picture of results and compares the nine cases along the key issues of the research. For example, it appears that Cases 4 and 9 had different, if not opposing, positions. Thus, in Case 6, the evidence collected supported the rational myth hypothesis concerning ISO 14001 implementation: low internal motivation for adopting the standard, strong external pressures, moderate resource and managerial commitment, low employee commitment, moderate implementation difficulties, and low practice and performance improvements. Conversely, evidence from Case 4 supported an implementation rationale driven primarily by internal motivations and not external pressures and a strong commitment by managers as well as employees.

This display of evidence from the cases studied sheds light on the existence of various integration rationales of the standard and questions the monolithic view of ISO 14001 certification. Indeed, if the cases studied were all ISO 14001 certified, organizational conformity to this standard, its internal impacts, and its support from employees as well as managers, appeared to be rather elastic.

Elasticity and Decoupling of ISO 14001 Conformity

Even if adopting the ISO 14001 standard brought about some internal benefits, these benefits were related mostly to administrative aspects: namely, rigorous management, monitoring of nonconformities, updating of documentation, computerization of the environmental management system, internal communication, more systematic audits, etc. These administrative improvements stemmed more from a methodical application of a rigorous management system and the rationalization of environmental programs than from profound changes in behaviour leading to contaminant discharge. Thus it would be difficult to consider ISO 14001 as a genuine tool for improving environmental efficiency. In addition to the lack of tangible improvement in environmental performance after adopting ISO 14001, the genuine integration of this standard and any real ensuing transformations seemed to vary considerably.

Indeed, adopting ISO 14001 presupposes that the differences between the prescriptions of the standard and an organization's environmental management system would be identified and reduced. However, with the exception of Cases 3 and 8, the system that was in place before certification already met ISO 14001 requirements reasonably well. For the most part, these requirements deal with fairly classical processes in big organizations: defining policy, objectives, plans, responsibilities, controls, etc. The main differences had much more to do with system documentation and its reorganization around a predetermined structure than with new practices. In fact, despite sometimes flattering statements about the ISO 14001 system, the real changes resulting from system implementation were, all told, rather modest:

> When we implemented ISO 14001, we had already had a fairly complete management system for five years, with objectives, sectorial programs, etc. We already had a lot of tools and it was just a question of taking them and sticking them on the standard. (Environmental Specialist, Case 5)

> Before we became ISO, we were already concerned about the environment. So the standard didn't change very much, except during the implementation, because the people in charge of the implementation had to build new procedures. But it didn't change anything for the employees. (Manager, Case 9)

In the absence of significant changes in work practices, the ISO 14001 standard tended to appear, both within and outside organizations, as a formal acknowledgment of good practices. Indeed, the standard implementation process required primarily that existing practices be documented and classified. This being true, it was not so much the organizations that adapted to ISO 14001 as the standard that was adapted to the organizations. As one

of the interviewed managers clearly stated, "It was less a question of doing what was written than of writing what we were already doing." Because of its bureaucratic characteristics, this documentation process, which was more often implemented for institutional reasons than in response to internal needs, was quickly perceived as the responsibility of the environmental department or certain managers. Interviews with the employees showed that they generally felt that they were seldom consulted about, or involved, in the implementation of the standard and the monitoring process. This attitude was particularly frequent in Cases 1, 2, 3, 5, 6, and 9:

> The people in charge of the standard wrote the procedures. Then they told the employees that from now on, we had to apply them in the factory. (Employee, Case 1)

> What exactly is ISO 14001? Has that got something to do with the environment or quality? (Employee, Case 5)

> To tell you the truth, we don't really talk about ISO 14001. If you go and talk to the miners, you'll see that a lot of them don't even know we're ISO 14001. All the managers know it, but down below, the union workers don't really know what it's all about. (Employee, Case 9)

In these organizations, the adoption of the standard seemed to follow a Taylorian path characterized by a fairly clear break between the managers who wrote the procedures and the employees who were supposed to apply them. The application of the procedures seemed, in reality, to be rather fuzzy. Indeed, about half the employees interviewed, especially in Cases 1, 2, 3, 5, 6, and 9, acknowledged that in practice the documentation was rarely consulted and that work behaviour often deviated from standard prescriptions. In fact, a measure of unpredictability in the organizations' complex daily activities inevitably implied deviations from written prescriptions. If they had always been applied to the letter, these prescriptions may have had an ossifying effect that everybody, including the people in charge of the environmental department, seemed to want to avoid. Moreover, the organizations did not generally try constantly and systematically to match their activities to the ISO 14001 system. Rather, it was important to avoid major deviations from the system and, above all, ensure that during certification audits that deviations were as small and as imperceptible as possible. The audit preparation work, which was intended to reduce nonconformities with system requirements, was often hurried and ceremonial in nature. Just like students who go over their notes before a final exam, the managers and employees consulted—sometimes for the first time—ISO 14001 documentation; they read the procedures, updated their knowledge, and attempted to ensure that the system would be in order at the time of the audit. Interviews with the employees showed that this "tidying up" was often superficial and improvised:

> I must admit that I only consult the documentation before internal audits and certification audits. Otherwise, you'll rarely see one of us open up the procedure book. In fact, to tell the truth, I don't think I've ever seen any one do it. (Employee, Case 1)

> We were trained only two or three days before the certification audit. They told us we were going to go ISO 14001 and how it worked so that we'd know something about it when the auditors came. (Employee, Case 3)

> There's a group of people who really got into ISO. They're the ones who take care of ISO when the certification has to be reviewed. When the inspector is coming, they spend whole nights preparing the documents. (Employee, Case 9)

With the exception of Cases 7, 8, and 4, employee application of the ISO 14001 standard was very shaky and intended, above all, to keep up appearances. This lack of integration contrasted with statements about certification rigour and resulting progress. Our interviews showed that there was double-talk in most of the organizations we studied. The first, concerning the formal aspects of the environmental management system, offered a rational, ordered, and idealized view of the ISO 14001 standard. The second, involving organizational practices and the real application of standard prescriptions, revealed the often artificial and decoupled nature of this system. The contradictions between these two types of statements were particularly frequent in Cases 1, 2, 3, 5, 6, and 9. For example, in Case 3, several of the respondents indicated that the environmental management system was based on employee participation and awareness of their responsibilities. This management philosophy was, moreover, reaffirmed with some insistence in several documents and in the organization's application for an environmental excellence prize. However, the interviews conducted with four operators of this automotive parts facility showed that endeavours to involve the employees were quite rare and essentially limited to audit preparations.

Generally speaking, despite recurring statements about the importance of employee awareness, respondents from the various organizations in our study had a very vague understanding of the ISO 14001 system. About 80% of them were not able to describe, even in the most general outline, their organization's environmental policy or the objectives they were supposed to achieve. At the very best, responses to these questions were evasive and laconic, including those of the managers and even certain environmental managers:

> Usually, I'm the one asking the questions about objectives when I do the internal audits. It's weird, but I'm drawing a blank. It's written down in the documentation. (Environmental Manager, Case 5)

The policy says we have to respect the laws, it talks about continuous improvement and environmental protection. (Manager, Case 7)

The policy says we have to keep production costs down, quality high, and respect the environment. (Employee, Case 8)

Our environmental policy? Hmm, I don't know, I didn't go and read it before the interview. (Manager, Case 9)

Reconciling Institutional and Organizational Issues

The fairly pronounced decoupling between real organizations and the organization prescribed by ISO 14001 posed some serious challenges for the maintenance of the system already in place. Indeed, all the managers interviewed indicated a wish to renew the certification. The system's failure or removal would have been difficult to justify to the head office, clients, and the general public. However, the contradictions between the institutional pressures and the internal reality of the environmental management posed problems of coherence, credibility, and even hypocrisy within the organizations. The extent of these problems varied with each case. They depended primarily on the intensity of the institutional pressures and the level of employee involvement in the standard. Based on these two aspects, we can distinguish four strategies for integrating the ISO 14001 system: ritual, decoupled, mobilized, and proactive integration (see Figure 1). An analysis of these different responses showed that, contrary to the classical model of isomorphism, each organization's adaptation to institutional pressure was far from homogeneous and unambiguous. The standard was not implemented according to one monolithic model. Rather, it was adapted to the various realities, contingencies, and contradictions found in the organizations.

The integration ritual was the one that was the most frequently encountered. It corresponded to high institutional pressure and low employee involvement. The certification did not appear to be a genuine internal management tool, but rather a way of promoting an organization's image and conformity to external pressures. The employees did not really feel involved in, or even concerned by, the implementation and monitoring of the standard. The standard was primarily perceived as an administrative activity under the responsibility of a few managers. Obtaining and maintaining certification were important and even essential objectives for ensuring the organizations' institutional legitimacy. Accordingly, significant technical and human resources were invested to document the environmental management system and pass the certification process. However, these resources did not lead these organizations to genuinely question their practices, except during the certification audits when the organizations endeavoured superficially to show that they conformed to the standard. This situation was particularly true in Cases 2, 5, 6, and 9. In these organizations, conformity to the standard was ritualistic and documentary. Because certification was explicitly required by the head office, these organizations had no choice in whether or not to adopt the standard. Thus, the adoption of ISO 14001 was an integral part of the corporate policy to standardize environmental management practices. In this perspective, external pressures can be characterized as high. Nevertheless, these external pressures did not coincide with strong internal motivations for adopting ISO 14001. Consequently, the certification process was perceived mostly as an external constraint or a requirement somewhat disconnected from internal practices. To explain the lack of employee involvement, managers generally answered that involvement depended on each person's awareness of environmental issues. In other words, the structures and programs existed, certification had been obtained, in short, the system was functioning with or without the support of some people. It was up to the employees to join in if they so desired:

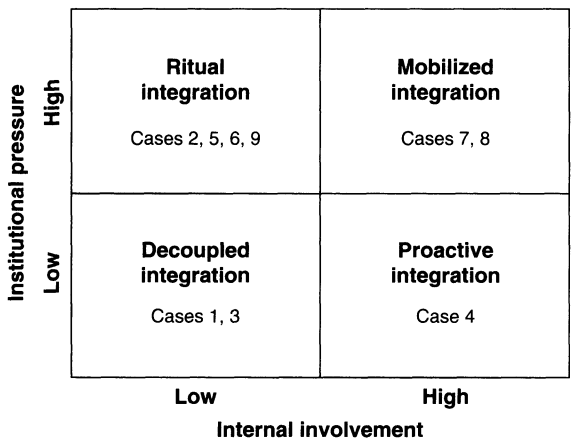
There are some people who respect the ISO procedures and others who don't. It depends on each person's personality. (Employee, Case 2)

I'm not the one who takes care of the documentation. I probably should, but it's a real hassle. The guys on the floor don't really get involved because of all the paperwork it requires. Here, if there's a spill and nobody sees it, we hide it and don't talk about it so that we don't have to do any paperwork. (Employee, Case 6)

If it's important for anybody to say that we're ISO, it's for the managers. They insist on it more. On the floor, the workers are happy to see that we're doing things for the environment, but I'm not sure that the ISO procedures have really changed the way we do things. (Manager, Case 9)

Decoupled integration corresponded to low institutional pressure and a low level of employee involvement. The absence of strong institutional pressure generally

Figure 1 Strategies for Integrating the ISO 14001 System



arose from sociopolitical changes or economic problems that compromised the continuity of existing programs. The motivation to continue monitoring the ISO 14001 system appeared to be insufficient given the cumbersomeness and constraints involved. Contrary to the ritual integration category, this lack of motivation was also perceptible among managers and environmental employees because of a lack of political will or available resources. Thus, monitoring the environmental management system did not appear to be a priority. The bureaucracy that ensued from even superficial conformity to standard requirements tended to become a serious impediment. The decoupling of real management from the ISO 14001 system was even more obvious than in the ritual integration category. This was particularly true in Cases 1 and 3. In these organizations, implementation of the standard initially appeared to be a somewhat constricting request from the head office, to which organizations initially responded quite well. However, the economic difficulties that arose shortly after obtaining certification obliged managers to shift their priorities and significantly reduce resources allocated to implementing and monitoring the standard. Consequently, institutional pressures were low at the time of the study and ISO 14001 appeared to be somewhat disconnected from the concerns of managers as well as employees. As an environmental manager from Case 1 explained, "What we do depends on the money and human resources that are available. It's the economic context that determines how much time and how many people we can devote to the environment." In Case 3, the environmental committee set up to promote and monitor the standard in the organization had not met for over a year at the time of our visit to the factory. This situation was linked to economic difficulties that had brought almost all the environmental programs to a complete standstill. As one of the operators involved in the factory's environmental committee noted, "When the standard was implemented, we had enough people to do the job, but that's no longer true. We have to concentrate on our production work now, which means we can't free any one up like we did when we implemented ISO 14001." The decoupled integration cases represented an almost complete abandonment of the ISO 14001 system, or a laissez-faire policy with respect to its requirements.

Mobilized integration corresponded to strong institutional pressures and fairly good internal involvement. Adopting the ISO 14001 system responded to organizational and institutional needs that encouraged use of the standard as a genuine management tool. Managers and employees cooperated more closely in the system's implementation than in the two preceding configurations. The adoption of the standard was accepted and applied more by employees. Even though lack of internal motivation was a fairly widespread problem, this lack was noticeably less pronounced in the organizations in this category. For example, in Cases 7 and 8, the implementation of the standard seemed to produce some fairly good results in terms of environmental practices and employee commitment. Even though these practices did not result in clear and measurable improvements regarding main environmental performance indicators, the ISO 14001 certification contributed better, in both cases, to integration of environmental practices in daily activities and to encouraging awareness of this issue. The reasons behind this success were quite different in the two organizations. In Case 7, the factory's considerable size (1,200 employees) required a rigorous environmental management system to coordinate the programs, delegate their implementation where possible, and facilitate the training of new employees. Certification was thus a means of reinforcing and structuring already existing practices. In Case 8, these practices were underdeveloped before the adoption of the standard because of the factory's smaller size (330 employees) and its relatively insignificant environmental impact. Implementing ISO 14001 increased managers' and employees' awareness of environmental issues and met an acknowledged need. Because ISO 14001 certification was a requirement from the head office, institutional pressures may be considered as high. Nevertheless, these external pressures did not conflict with internal motivations and, to some extent, contributed to strengthen employee commitment. Consequently, the interviews showed that the standard was not perceived as a system imposed by managers, but rather as a managerial tool encouraging environmental involvement. Most employees in Cases 7 and 8 admitted that there had been a genuine attempt to consult them and involve them in the implementation of the standard. According to managers, this consultation contributed greatly to a successful implementation:

> The most important thing we did was to set up several ways for the employees to participate and express their opinions. Before, all we had was a small suggestion box. Now, the employees can easily make comments and suggestions for environmental improvement through the computerized systems we've set up. We get lots of these suggestions now. (Manager, Case 7)

> Our employees believe that we're more concerned about the environment because we meet with them regularly. They see the work we're doing in the field, in the memos, in the meetings, and in the environmental teams we've set up. (Manager, Case 8)

The last type of configuration corresponded to relatively low institutional pressure and a fairly significant internal involvement. The integration process was proactive in as much as it was not the result of a passive reaction to external prompting. Rather, it stemmed from organizational needs and preceded requests by clients or the head office. The phenomena of decoupling and ritual conformity to standard requirements were, in principle, less likely and less intense. Case 4 corresponded

well to this category. In this factory, it was the environmental manager who had pushed for the adoption of ISO 14001. According to interviews performed, no external pressures from the head office or external stakeholders directly influenced this decision. Consequently, institutional pressures were low and ISO 14001 implementation was driven by internal motivations, especially for codifying well-established environmental practices. In fact, the environmental manager had already set up a well-functioning system. The requirements of the previous system were similar to most of the ISO requirements and had permitted significant improvements in both environmental aspects and cost savings because of discharge reduction. Moreover, the environmental management of this organization was recognized in Canada for its avant-garde nature and active employee involvement. Because of the differences in terms of sector of activity, production process, and contaminants discharged into the environment, it would be ill-advised to claim that Case 4 performed better than the others. Nevertheless, Case 4 was clearly considered by many organizations to be a benchmark for environmental management and has spearheaded huge improvements in pollution prevention over the past decade through various technical measures and strong employee involvement. As an example, discharges of HCl and magnesium chloride ($MgCl_2$) into water, which represented the main environmental issue, were reduced by about 98% over the last 10 years. These reductions have resulted in about $1 million in economies per year. Nevertheless, these reductions are based on a continuous-improvement rationale implemented at the onset of the 1990s, long before ISO 14001 was introduced. The adoption of the standard was in continuity with this rationale of continuous improvement, but these improvements were not initiated or strengthened by ISO 14001 certification. For the environmental manager, ISO 14001 certification represented, first and above all, a means of better structuring existing practices and ensuring their continuity with more systematic documentation. A memo from the factory's general manager intended for all the employees succinctly summarized the viewpoint adopted in the implementation of the system:

> So as to further improve our environmental performance and ensure its continuity, we are using the ISO 14001 international system to review our environmental management system. ...I am therefore asking everyone to help ensure that this improvement, which is in keeping with our past environmental actions, is successful.

Discussion

The case study conducted shows that, except in Case 4, concern for institutional legitimacy was the main driving force behind the initial decision to adopt the ISO 14001 standard. However, there were only relative improvements in environmental practices and performance, despite the often idealized statements about the standard's supposed rigour, rationality, and other advantages. These idealized statements illustrated the gaps that often crop up between the managers' rhetoric and the actual practices in the implementation of total quality programs (Reger et al. 1994, Zbaracki 1998). Generally speaking, the formal structure of the ISO 14001 system and organizations' daily practices were loosely coupled (Weick 1976) and even, in certain cases, decoupled. In organizations where this dissociation was particularly obvious, as in Cases 1, 3, and, to a lesser extent, Cases 2, 5, 6, and 9; statements about standard efficiency, rationality, and operational integration revealed a sort of organizational hypocrisy (Brunsson 1989). These statements confirmed the existence of rational myths that were maintained to justify the implementation of the ISO 14001 system and give it a more legitimate appearance. The rhetoric about the virtues of the standard also helped to dissimulate internal contradictions and avoid compromising system continuity. In this context, the desire for legitimacy and the development of a rational myth around the ISO 14001 certification did not aim solely at adapting an organization's formal structure to the expectations of the institutional stakeholders (Meyer and Rowan 1977, Zbaracki 1998). Rather, it also helped to provide a coherent, rigorous, and legitimate vision of the ISO 14001 standard within organizations that encouraged employees to adhere to this system and discouraged them from openly questioning its worth. Indeed, even in organizations where commercial and institutional aspects dominated, the standard remained, at its base, an internal management tool whose implementation, certification, and continuity required a minimum amount of employee support. The development of rational myths was not unilaterally imposed by the institutional environment; it was also created, maintained, and "enacted" (Weick 1979, Scheid-Cook 1992) within organizations.

In most cases in our study, especially those corresponding to ritual integration, this rational myth helped, above all, to develop a parallel structure to existing organizations. This structure, composed essentially of documents and administrative rules, allowed organizations to showcase their conformity with the ISO 14001 system during audits. To a large extent, the audit operations that were indispensable for obtaining certification seemed to determine the way in which organizations designed and implemented their environmental management system. As Power pointed out in his study of audit implementations:

> Though it would be implausible to suggest that organizations are literally created by audit processes, it can nevertheless be said that a significant auditable sub-organization is constructed and partly (often) or wholly (rarely) exists to correspond to the audit process. (Power 1996, p. 295)

From this perspective, the bureaucratic and procedural aspects of the standard served mainly to facilitate verification of the management system, particularly during external audits. These audits tended to create a rational information and documentation structure in organizations that was necessary for their own existence, while helping to legitimize existing practices (Power 1996, 1997, 2003). Our interviews suggested that preparing and conducting audits often led to ritualized behaviour superficially demonstrating organizational conformity. With the exception of Cases 4, 7, and 8, this conformity seemed to be very flexible, existing mainly for the certification process. Between audit periods, managers and employees were far less careful about deviations from the standard. System documentation was rarely consulted except to prepare for possible questions from auditors. Likewise, training and information activities usually occurred before these audits, even though the needs in this field were quite constant and significant. This ritualization of ISO 14001 conformity tended to undermine certification credibility in the eyes of employees, who rarely felt that they were genuinely involved in the implementation and monitoring of the system. Whereas it should have led to a better integration of environmental concerns in daily activities, this system appeared, above all, to fall under the responsibility of a few managers responding to external demands.

Although these observations reflect the general tendency of the data analysis, some distinctions nonetheless must be made between the various organizations. While they were not as numerous, the cases of mobilized and proactive integration showed that the rationality and rigour of the standard cannot necessarily be reduced to baseless myths. In Cases 4, 7, and 8, the organizations made marked progress in their environmental programs and employee awareness. In other organizations, progress, although sporadic, was not insignificant, particularly with respect to the definition of policy, objectives, and more rigorous environmental programs. Even so, these improvements did not seem to result in more efficiency or less environmental impact. Rather, they were based on difficult-to-verify affirmations that were not extraneous to the existence of the rational myths whose credibility and contradictions varied according to the organizations.

The main contribution of this case study was to show how these myths were interpreted, enacted, and transformed within these organizations through an ISO 14001 implementation that varied in its ceremonialism. The development of these myths appeared to be a response to the contradictions between institutional environmental requirements and the daily practices that remained relatively unchanged despite the adoption of the standard. The formal structure and rhetoric surrounding the standard allowed organizations to satisfy certification requirements superficially, and reinforce system legitimacy both within and outside organizations without really questioning current practices. Through their socially constructed character, myths about ISO 14001 contributed to obscuring the decoupling between the formal prescriptions of the standard and organizational practices, while permitting a flexible and periodic adaptation of system requirements. In this context, the adoption of the standard was not only determined by external institutional constraints, but also by internal choices often made to limit possible constraints of an overly strict application of system requirements. To a large extent, certified organizations seemed to avoid building weighty and bureaucratic "iron cages" by adopting different integration strategies in response to specific interests and situations.

In organizations that did not wish to or could not continue to monitor the ISO 14001 system, as in Cases 1 and 3, the system was simply decoupled from the organizations at the risk of compromising certification renewal in the short and medium term. In organizations that wished to continue this monitoring while limiting its unwieldiness and the reappraisals that it could entail, as in Cases 2, 4, 5, 6, and 9, ritual integration predominated. Finally, in the other cases, the formalist procedural aspects of the ISO 14001 system served as a foundation for building the organizations' first environmental management system or structuring already existing programs. Whichever organizations considered, the emergence of rational myths about the standard represented a sort of screen between real practices and those prescribed by the system. This screen, which varied in size according to the contradictions involved in system implementation, was based on statements, beliefs, and ceremonial behaviours intended above all to keep up appearances. Indeed, the effort required to maintain a belief in system rationality and efficiency was greater in the ritual and decoupled integration categories than in the other two because of contradictions ensuing from the lack of employee mobilization. The "rhetoric of success" (Zbaracki 1998) about the standard was then used as an opaque veil of politically correct statements behind which any weaknesses in the system could be dissimulated.

The results of our study and the proposed integration model help to provide a more dynamic and contingent view of rational myths by showing their socially constructed and discursive nature. Likewise, they allow us to better understand the ins and outs of implementing the ISO 14001 system. Indeed, even though the number of certified organizations has increased rapidly, the impact of this system on practices and environmental performance remains, for the most part, uncertain. Most of the research on this issue is based on quantitative studies measuring managers' attitudes regarding the ISO 14001 impacts (González-Benito and González-Benito 2005, Melnyk et al. 2003, Goh Eng et al. 2006, Welch

et al. 2002). The tendency of these quantitative studies to advocate a positive impact of ISO 14001 certification on environmental performance may be biased by dominant rhetoric about standard rationality and efficiency.

Our study contributes to questioning these impacts and rhetoric by showing the paradoxes between the discourses about ISO 14001 effectiveness and the evidence supporting these benefits. The evasive, general, and most often optimistic statements in response to questions concerning ISO 14001 impact on environmental performance reveal the role of rhetoric in the justification of adopting the standard. This somewhat stereotypical rhetoric advocating the advantages and usefulness of the standard appears as a sort of discursive substitute to offset the lack of convincing evidence demonstrating the actual effectiveness, integration, and even the intrinsic consistency of ISO 14001. In the same vein, the very vague understanding of the environmental policy, objectives, and other essential aspects of ISO 14001 by managers responsible for the system seriously questions the actual application of this system in an organization's daily activities. From this perspective, ISO 14001 can be considered, in many organizations, as a sort of "managerial fad and fashion" (Abrahamson 1991, p. 586) intended above all to sustain the image, legitimacy, and rationality of environmental management.

Thus, ISO certification appears to be legitimized and rationalized through discourses and language games that create an appearance of rationality, conformity, and success somewhat decoupled from actual practices. This rhetoric is not only a response to institutional pressures for adopting this system, but also a way of managing ISO certification by creating beliefs, values, and meanings concerning the *raison d'être* of the standard. These beliefs are necessary to sustain certification, support the credibility and usefulness of this system, and encourage minimum commitment from employees as well as managers. The discrepancy between this rhetoric of legitimization and the internal involvement with respect to the standard reflects the scope and intensity of rational myths associated with ISO 14001 adoption. These rational myths, which are more intense in the ritual integration rationale, are not unilaterally imposed by the institutional environment. They are also created and reproduced in organizations through the construction of a rhetoric of justification. This rhetorical construction allows organizations to "stretch the iron cage" (Prasad and Prasad 2000, p. 387) of certification by adopting ISO 14001 while avoiding or restricting the cumbersomeness, paperwork, and constraints arising from the requirements of this management system.

The main results of this study give credence to the "rhetorical theory of diffusion" (Green 2004), which advocates that the adoption of managerial practices is not necessarily driven by their intrinsic effectiveness, but by the persuasiveness of discursive reasons justifying their implementation. These discursive justifications determine the rationality, "taken-for-grantedness" and institutionalization of managerial practices. Thus, the growing diffusion of ISO 14001 and ISO 9001 certification could be explained not only by external pressures or internal motivations, but also by the rational rhetoric supporting these systems that has been institutionalized in many sectors of activities. This discursive rationality is embedded in general and optimistic statements echoed in certified organizations, as well as throughout their institutional environment: relevance, effectiveness, and rationality of ISO management systems; importance of protecting the environment or enhancing customer satisfaction; rigour of the auditing process; legitimacy and recognition of the International Organization for Standardization; number of organizations having adopted these international standards; commercial advantages of certification; etc.

Nonetheless, these conclusions are preliminary because of the exploratory nature of the subject, the methodology used, and the small sample size restricting the external validity of results. This limitation in generalizing these results is inherent in the case method, whose goal is to understand complex phenomena rather than measure their frequencies and correlations to extrapolate onto the general population (Maxwell 1996, Leonard-Barton 1990, Eisenhardt 1989). Hence, these results are specific and contingent, even if it is reasonable to think that the observed phenomena apply, to a certain extent, to other certified organizations. The limitations of this study should provide some interesting avenues for future research because, apart from the small sample size, these limitations are primarily because of the newness of the standard and the approach used in the study.

First, because of the relatively young age of the ISO 14001 system and the time required to implement it, all cases presented here had adopted the standard only two or three years before this study was conducted. However, this is a relatively short period in which to be able to identify environmental performance impacts. Moreover, several respondents pointed out that such effects could genuinely be seen only over the long term. The newness of the standard may also have biased the way in which it was integrated into practices and the level of the organizational conformity. Indeed, as several respondents noted, it was often more difficult to maintain, rather than obtain, certification. The lack of distance from, and experience with, the standard necessarily limited our capacity to observe this phenomenon over a sufficiently long period of time. However, these limitations will decrease quickly. Studies that focus on longer certification periods or that return to previously studied sites will certainly shed light on the origin and evolution of the rationale underlying the various standard integration categories and their effect on environmental performance. This more longitudinal approach is

particularly useful in studying the values and individual concerns that determine the emergence of organizational responses to environmental issues (Bansal 2003). Studying several organizations within the same company over a certain length of time would make it possible to analyze how corporate directives concerning standard implementation are interpreted and applied in different locations. Finally, this type of study could be used to analyze the institutionalization of ISO standards within a larger organizational field, and to delve deeper into the reasons motivating some head offices to promote certification in their subsidiaries. The present research does not analyze these motivations because the case studies performed were focused on different production sites and not on corporate top managers. An interesting avenue of research would be to carry out comparative case studies at the head office level to better understand the factors driving some corporations to promote ISO 14001 in their subsidiaries, and the role of rhetoric in the dissemination of the standard.

Second, the results of studies of ISO standards tend to be biased by stereotypical statements about the benefits of implementing the system. Most of the respondents, particularly those directly involved in implementing the standard, initially adopted a positive and even enthusiastic attitude about the advantages of being certified. More critical or subtle statements appeared only later, when more precise questions were asked about environmental performance impact, employee consultation and involvement, concrete changes resulting from ISO 14001, and how standard prescriptions were followed in daily practices. The optimism of the official rhetoric concerning ISO 14001 no doubt followed in the wake of the propensity of organizations to reduce contradictions and paradoxes and present a coherent image of themselves (Morrison and Milliken 2000, Glynn et al. 2000). However, this optimism probably stemmed from a desire for legitimacy in the eyes of external observers with whom it generally takes a long time to establish a genuinely trusting relationship. The presence of a researcher is not neutral with respect to collected data and may encourage superficial conformity with what is perceived to be legitimate and rational. In other words, researchers can become, despite themselves, actors in the rational myths and organizational paradoxes that they wish to observe. Despite the contrasting statements collected in this study, it is likely that more critical or less well-informed viewpoints about the standard might have been gathered through more numerous interviews held outside of the workplace or conducted over a longer period of participative observation.

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