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ORGANIZATIONAL LEGITIMACY AND THE STRATEGIC USE OF ACCOUNTING
INFORMATION: THREE STUDIES RELATED TO SOCIAL AND ENVIRONMENTAL
DISCLOSURE

by

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A dissertation submitted in partial fulfillment of the requirements
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ABSTRACT

This dissertation consists of three separate, but inter-related, studies overarching a common theme labeled “the role played by social and environmental accounting disclosures using different methodologies and framed within legitimacy theory.” The first study investigates the use of different language techniques in social and environmental disclosures (SED) and tests whether the impression management hypothesis holds when disclosures are measured as such. The second study extends the “legitimacy on the Internet” arguments of Patten and Crampton (2004) by examining the content and presentation of corporate website environmental disclosure in relation to firm environmental performance of four size-matched sample groups constructed based on industry environmental sensitivity and America’s Toxic 100 membership (the top 100 polluters in the US). The third study investigates whether and how Total, one of the world’s largest integrated oil and gas companies headquartered in France, utilized legitimation strategies such as social and environmental disclosures, to respond to two significant environmental incidents. Taken together, these three studies build upon prior theoretical and empirical work to substantiate and advance social and environmental accounting research using various methodological lenses and perspectives.

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GENERAL INTRODUCTION

The organization-society interface has increasingly become one of the relevant contemporary issues in organizational and business ethics research (see, e.g., Preston and Post, 1975; Dowling and Pfeffer, 1975; Meyer and Rowan, 1977; Lindbolm, 1994). In particular, under a systems-oriented perspective, organizations are viewed as operating within a wider social context. This allows for an examination of the function of information and social disclosure within the relations between stakeholders such as organizations, governments and individuals (Gray et al., 1995) because each entity is presumed to be “influenced by, and in turn to have influence upon, the society in which it operates” (Deegan, 2002, p. 292).

Central to this dissertation is organizational legitimacy theory and the notion that a social contract exists between business and society (Shocker and Sethi, 1973; Deegan, 2002). To the extent that the actions of an organization are aligned with societal expectations, it is considered to be in conformity with the contract, socially responsible, and therefore, in a “state” of legitimacy (Deegan, 2002). However, Lindbolm (1994) suggests that should a discrepancy arise between an organization’s actions and the value system of society at large (i.e., stakeholders *outside* the organization), its legitimacy becomes threatened. Such a breach in the social contract can lead to higher risks of societal sanctions and even the demise of the firm (Deegan & Rankin, 1996). As a result, corporations have an incentive to actively attempt to change the norms, values and beliefs of those external constituents (Dowling and Pfeffer, 1975; Lindbolm, 1994) and manage their impressions (Neu et al., 1998). Organizational managers engage in a strategic process of legitimation such as, for example, providing more extensive social and environmental

disclosures, to gain, maintain or repair the organization's legitimacy (Ashforth and Gibbs, 1990; O'Donovan, 2002).

The concepts pertaining to the organization-society interface, organizational legitimacy theory, and the social contract have, in part, contributed to the growth of social and environmental accounting research over the last three decades. In addition, they have increasingly become of interest to a broad range of stakeholders. Thus, this dissertation attempts to help better understand (1) the role of corporate environmental disclosures, and (2) *why, how* and *when* those disclosures may serve as legitimating tools. This dissertation provides empirical evidence on these issues through the development and execution of three separate, but inter-related, studies. Each study is discussed separately in the following three sub-sections.

**Study One:
Language Used in Environmental Disclosure in 10-K Reports: Impression Management Strategy?**

Study one investigates the use of different language techniques in corporate environmental disclosures and tests whether the impression management hypothesis (see Neu et al., 1998) holds when disclosures are measured as such. The relevance of this research is illustrated by (1) prior research, which has shown that corporate environmental information has become increasingly desired by firm stakeholders (Epstein and Freedman, 1994) and is material to their decision-making (Deegan and Rankin, 1997; Neu et al., 1998); (2) study results from the U.S. Environmental Protection Agency and U.S. Government Accountability Office indicating violations of environmental disclosure regulations in 10-K reports; and (3) the recent Congressional debates focusing on the transparency and accuracy of financial information

reporting, which could pertain to environmental disclosures as they constitute a mandated and integral part of a company's financial reports (i.e., the annual and 10-K report).

My argument in study one revolves around the idea that the *way* information is presented (i.e., word choice, sentence structure, grammar, syntax, transitivity, verbal tone) in corporate environmental disclosure is equally or perhaps more important than the amount ("form oriented") or the thematic content ("meaning oriented"), and that such narrative choice is not neutral to firm environmental performance. I use computer-based measurement approaches to evaluate the extent of obfuscation, distance and bias contained in corporate environmental disclosures for a cross-sectional sample of U.S. firms' 10-K reports. Based on prior research methodologies, the obfuscation construct was operationalized by readability measures; the distance construct by transitivity index measures; and bias by both optimism and certainty measures.

Overall, this study advances the social and environmental literature by systemically analyzing the syntactic structure of environmental disclosure and examining whether corporations attempt to manage impressions with large amounts of disclosure while, in fact, these disclosures may be written in a biased and/or opaque fashion to deliberately mislead report users. In short, this study makes a contribution in exploring further the characteristics of impression management.

**Study Two:
Environmental Reporting on the Internet by America's Toxic 100: Legitimacy and Self-Presentation**

Study two examines the content and presentation of corporate website environmental disclosure in relation to firm environmental performance of four size-matched sample groups

constructed based on industry environmental sensitivity and America's Toxic 100 membership (the top 100 polluters in the US). This study extends the "legitimacy on the Internet" arguments of Patten and Crampton (2004), who argue that Sustainability/United Nations Environment Program's (1999) vision of the Internet providing greater corporate accountability may be overly optimistic. According to them, website environmental disclosure, like financial report environmental disclosure, appears to be a legitimating tool.

In study two, I refine the measure of Internet environmental disclosure by developing a comprehensive disclosure evaluation metric to assess both the content and the presentation of Internet website environmental disclosure. This metric consists of 41 measurement items (21 for content and 20 for presentation) and is developed based on prior literature in both environmental *and* financial reporting on corporate Internet websites (Patten and Crampton, 2004 for the content part and Jones et al., 1999 and Marston and Polei, 2004 for the presentation part). Environmental performance is assessed by the America's Toxic 100 membership compiled by the Political Economy Research Institute (PERI) at the University of Massachusetts Amherst. The measure is determined by firm toxic score, a newly developed measure based on the US Environmental Protection Agency's Toxic Release Inventory (TRI) data.

Overall, this study helps obtain a better understanding of the online environmental reporting motivations and practices of corporations. I draw from Goffman's (1959) theory of self-presentation within the organizational legitimacy framework to argue that poor environmental performers present large amounts of environmental information on a savvy website in order to manage stakeholders' impressions and enhance their appearance. This is consistent with the legitimacy argument that once firms determine that their performance does not meet societal expectations, they will seek to offset this negativity by using legitimating

strategies such as environmental disclosures since those are perceived as an effective means to change the perceptions of external parties (Deegan, 2002).

**Study Three:
Legitimation Strategies Used in Response to Environmental Disaster: a French Case Study
of Total S.A.'s Erika and AZF Incidents**

Study three presents a case study examining the environmental disclosure decisions and practices of Total S.A. (hereafter, Total), one of the world's largest integrated oil and gas companies headquartered in Paris, France. Because the company has a substantial international presence and operates in environmentally sensitive industries, management is constantly exposed to ethical and social issues as well as public pressure around the world. Total recently faced two major environment-related disasters, the sinking of the *Erika* tanker, leading to a major oil spill along the Atlantic coast of Bretagne in 1999, and the 2001 deadly explosion of the AZF chemical plant in the suburb of Toulouse.

This case study is framed within legitimacy theory, originating from the notion of a "social contract" between organizations and society. The "social contract" presumably justifies an organization's "raison d'être" and its survival, thus much effort will be made to ensure its preservation. Because the two incidents in which Total was directly involved constitute a major breach of the contract, it was essential for the company to implement some strategies to repair its legitimacy (in addition to protecting itself via legal means). Accordingly, study three investigates whether and how Total utilized those legitimation strategies related to social and environmental disclosure to respond to these incidents.

Similar to Buhr (1998), I use a triangulation of data sources (see Patton, 1987; Yin, 1994) by employing a combination of historiography, chronological time-series content analysis (both

quantitative and qualitative) and semi-structured interview approaches to construct the case.

That is, I examined the company's Internet website, annual reports, press releases and corporate social responsibility reports for the period 1996-2002, and conducted fourteen semi-structured interviews with Total personnel and other relevant individuals and stakeholders.

Overall Contribution

Taken together, studies one, two and three of this dissertation offer several significant contributions to the social and environmental accounting literature. First, this dissertation advances the evaluation schemes used in corporate environmental disclosure analysis by introducing alternative measures capturing verbal tone and readability. While this contribution primarily remains methodological, it also has some public policy implications. Transparent and unbiased accounting information reporting, including environmental disclosure, is becoming increasingly essential and relevant, as demonstrated by the recent Congressional hearing entitled "Fostering Accuracy and Transparency in Financial Reporting." Second, I develop a disclosure measurement metric based on prior research to capture the content and the presentation of environmental disclosure on corporate websites. This is pertinent to the methodologies used in social and environmental accounting research as it can improve the rating processes of website disclosure. Furthermore, I introduce a different measure for firm environmental performance captured by the toxic score rankings. As such, the comparative analysis conducted in this dissertation helps to expose the potential motivation for poor environmental performers to present environmental information on savvy websites. Third, this dissertation contributes to the case study literature in social and environmental accounting research. While sample-based studies are more prevalent, qualitative cases with in-depth analyses and multiple interviews

remain rare. This dissertation provides an event case study of a large French oil company that encountered two environmental incidents within a short period of time.

Overall, the three studies from this dissertation provide both quantitative and qualitative empirical evidence on the strategic use of environmental disclosures as a shield against social pressures, particularly for firms with poor environmental performance. I use different methodologies to test legitimacy and impression management theories, which constitute the primary overarching theme of this dissertation. Quantitative computer-based and website coding measurements of disclosure are performed on a large sample basis, whereas qualitative analysis and interviews are conducted in an insightful case study. In addition, this dissertation explores the various communication means and media (such as annual reports, 10-K reports, press releases and corporate websites) through which corporations disseminate environmental information. The remainder of this dissertation presents each of the three studies in detail.

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**STUDY ONE:
LANGUAGE USED IN ENVIRONMENTAL DISCLOSURE IN 10-K REPORTS:
IMPRESSION MANAGEMENT STRATEGY?**

Introduction

Prior research shows that corporate environmental information has become increasingly desired by firm stakeholders (Epstein and Freedman, 1994) and is material to their decision-making (Deegan and Rankin, 1997; Neu et al., 1998). In spite of this, a 1998 U.S. Environmental Protection Agency (EPA) study found that 74 percent of publicly traded corporations violated at least some Securities and Exchange Commission (SEC) environmental disclosure regulations in their 10-K reports¹ (Goodman and Little, 2003). In addition, the U.S. Government Accountability Office (GAO) reported that some users of company filings viewed existing disclosure requirements as “too flexible and too narrowly scoped” (2004, p.3) and accused the SEC of implicitly condoning the violations of disclosure regulations. The broad reporting guidelines coupled with the lack of enforcement provide firms with discretion regarding *how much* and *what* to include in their 10-K environmental disclosures. Therefore, it is not surprising to observe significant variations in both the content and the quantity of this type

¹ The rules set forth in Regulation S-K cover 1933 and 1934 Act registration statements, and all other periodic statements (e.g., annual and quarterly reports filed on Forms 10-K and 10-Q, respectively) to be filed with the SEC by registrants as outlined in Regulation S-K. Under SEC regulations and accounting standards relating to contingencies (Statement of Financial Accounting Standard No. 5), U.S. firms registered on a stock exchange must disclose environmental information in their 10-K reports. Regulation S-K items 101, 103, and 303 provide guidance for environmental disclosures. Item 101 (Description of Business) requires a general description of the business and specific disclosure of the material effects of complying or failing to comply with environmental laws may have on capital expenditures, earnings, and competitive position of the registrant and its subsidiaries. Item 103 (Legal Proceedings) addresses environmental proceedings and requires disclosure of pending or contemplated administrative or judicial proceedings if: (a) such proceedings are material to the business or financial condition of the registrant, (b) such proceedings involve a claim which exceeds ten percent of the registrant’s current assets, or (c) a government authority is a party to such proceedings where sanctions will be greater than \$100,000. Item 303 (Management’s Discussion and Analysis of Financial Condition and Results of Operations) requires disclosure of material events, contingencies and uncertainties known to management that would cause reported financial information to be unrepresentative of future operating results or financial conditions.

of disclosure (see, e.g., Freedman and Jaggi, 1986; Blacconiere and Patten 1994; Gamble et al. 1995).

Environmental disclosures are generally included by corporations in their accounting reports (e.g., the 10-K report or annual report) to convey to specific stakeholders (see Roberts, 1992) information about a firm's environmental activities and performance (Berthelot et al., 2003). Such disclosures are classified as "accounting narratives" (see Jones and Shoemaker, 1994). Through the use of these narratives, firms can decide to provide a large or small amount of information (quantity) and to cover a wide or narrow range of topics (thematic content) in their reports. Several studies have quantitatively examined and measured disclosures from both perspectives (see, e.g., Patten, 1992; 1995; Hackston and Milne, 1996; Neu et al., 1998 for the quantity approach; Wiseman, 1982; Hughes et al., 2001; Patten and Trompeter, 2003 for the thematic content approach). Neu et al. (1998) suggest that management prefers accounting narratives such as environmental disclosure, rather than financial or other quantifiable information because they can be worded and tailored for specific key stakeholders to effectively manage public impressions.

One approach to measure environmental disclosure that has not yet been explored is the assessment of impression management in terms of different emerging constructs of interest such as the language difficulty level (i.e., obfuscation), the extent to which narratives facilitate some detachment from negative factors and the language bias contained in these accounting narratives. This is an important issue because (1) corporate managers have the authority to determine, at their full discretion, the verbal communication techniques when formulating environmental disclosure in their 10-K reports; and (2) firm stakeholders must be able to comprehend the

content of accounting narratives without much effort, suggesting transparent, unbiased conveyance and transmittal of information is critical².

The purpose of this study is to extend prior social and environmental accounting (SEA) research, especially the methodology of environmental disclosure *measurement*, and to test whether impression management theory holds when disclosures are measured as such. I argue that the *way* information is presented (i.e., word choice, grammar, syntax, verbal tone) in environmental disclosure is equally or perhaps more important than the amount or the thematic content, and that such narrative choice is not neutral to firm environmental performance. I use Diction, a computerized content analysis software (see Hart, 2000a; 2000b; 2001), and the Microsoft Word Readability Statistics package³ (see Courtis, 1998) to evaluate the verbal tone and readability level of corporate environmental disclosure for a cross-sectional sample of U.S. corporations' 10-K reports⁴.

This study contributes to the SEA literature in two ways. First, this study improves the metric used in corporate environmental disclosure analysis by introducing alternative measures capturing verbal tone and readability. The current study advances this particular literature by

² In relation to this issue, there is a current debate, at the federal government level, regarding the complexity of financial reporting. In fact, there was a Congressional hearing before the U.S. House of Representatives' Committee on Financial Services, Subcommittee on Capital Markets, Insurance and Government Sponsored Enterprises held on March 29, 2006 entitled "Fostering Accuracy and Transparency in Financial Reporting". A review of testimonies from Bill Gradison (Acting Chairman of the Public Company Accounting Oversight Board), Robert H. Herz (Chairman of the Financial Accounting Standards Board) and Scott A. Traub (Acting Chief Accountant of the U.S. Securities and Exchange Commission) reveals a consensus on the essentiality of transparent financial reporting.

³ I use Windows-based DICTION version 5.0 and Microsoft Word version 2003, as they were the most updated and recent versions at the time of this research.

⁴ Computerized content analysis methods have been used and validated in studies analyzing accounting narratives such as the "Management Discussion and Analysis of Financial Condition and Results of Operations" section of the 10-K report (see, e.g., Ober et al., 1999) or the annual report chairman's letter (see, e.g., Jones, 1988; Courtis, 1998; Smith and Taffler, 2000; Sydserrff and Weetman, 2002) but also in other disciplines such as psychology (see, e.g., Rush et al., 1974; Gervasio et al., 1992; Gottschalk, 1995) and political science (see, e.g., Fan, 1988; Narcos et al., 1991).

analyzing the syntactic structure of corporate environmental disclosure using a systemic computer-based measurement approach and attempts to overcome some of the issues related to reliability of disclosure measurement. Second, this paper helps determine whether corporations attempt with large amounts of disclosure to manage impressions by writing them in a biased and/or opaque fashion to deliberately obscure report users. In short, this study makes a contribution in exploring further the characteristics of impression management.

The remainder of the paper is organized as follows. The next section offers some background on the link between legitimacy theory and impression management, prior research in environmental disclosure measurement, computerized content analysis, Diction and the Microsoft Word Readability Statistics package. Hypotheses are developed thereafter, followed by the methods and analysis, and the results. Finally, a discussion, with limitations and future research opportunities are provided.

Background

Legitimacy theory and impression management

Lindholm (1994) argues that legitimacy relates to a status while legitimation is a process that underlies that status. As such, she proposed the following conceptual definition of legitimacy:

...a condition or status which exists when an entity's value system is congruent with the value system of the larger social system of which the entity is a part. When a disparity, actual or potential, exists between the two value systems, there is a threat to the entity's legitimacy (Lindholm, 1994, p. 2).

Aligned with this definition and within the context of organizational interaction with society, legitimacy theory has emerged, stating that "organizations continually seek to ensure that they operate within the bounds and norms of their respective societies, that is, they attempt to ensure

that their activities are perceived by outside parties as being legitimate” (Deegan, 2000, p. 253).

Therefore, the level of congruence between a corporation’s activities and societal expectations of that particular corporation’s activities (see O’Donovan, 2002) is a direct reflection of its legitimacy.

Dowling and Pfeffer (1975, p. 127, emphases added) suggest that the organization might adopt one or more of three alternative approaches to become, or at least appear, legitimate:

- the organization can adapt its output, goals, and methods of operation to conform to prevailing definitions of legitimacy;
- the organization can attempt, *through communication*, to alter the definition of social legitimacy so that it conforms to the organization’s present practices, outputs and values;
- the organization can attempt, *again through communication*, to become identified with symbols, values and institutions which have a strong base of social legitimacy.

In each of the last two strategies, communication plays an essential role in the legitimization process. Because environmental disclosures constitute an efficient communication device for corporations, legitimacy theory has been widely tested, referenced and validated in the literature (see, e.g., Deegan and Gordon, 1996; Hackston and Milne, 1996; Neu et al., 1998; O’Donovan, 1999; 2002; Patten, 1991; 1992; 1995; 2002; Deegan, 2002; Deegan et al., 2002; Milne and Patten, 2002; Cho and Patten, 2006)⁵.

⁵ Some of the cited studies were part of a special issue of the *Accounting, Auditing and Accountability Journal (AAAJ)* in 2002, entirely dedicated to legitimacy in SEA research and comprised of five theoretical and empirical studies. For example, as the issue’s introductory paper, Deegan (2002) laid out a theoretical foundation on legitimacy theory and its effect on social and environmental disclosures. Milne and Patten (2002) investigated the actual impact of environmental disclosures on individuals through an experiment and found that under certain circumstances positive disclosures can restore an organization’s legitimacy. Using a qualitative approach (i.e., semi-structured interviews with senior personnel of three large Australian public companies), O’Donovan (2002) found supporting evidence for legitimacy theory as an explanatory factor for environmental disclosures. Apart from the 2002 *AAAJ* special issue, other studies show that firms make use of SED as a strategic tool to help mitigate exposure to public policy pressure or the adverse effects of poor social and environmental performance (Patten 1992, 2002;

Because legitimacy revolves around the idea of managing societal perceptions, the impression management concept can be positioned within organizational legitimacy theory. The link between impression management and organizational legitimacy is supported by Neu et al. (1998) who argue that “while the symbolic aspects of organizational actions have been central to legitimation researchers, textually-mediated discourses [aimed at managing public impressions] have more recently been seen as fulfilling a similar function” (Neu et al., 2002, p. 268). Further, Leary and Kowalski (1990, p. 34) note:

Impression management refers to the process by which individuals attempt to control the impression others form of them. Because the impression people make on others have implications for how others perceive, evaluate, and treat them, as well as for their own views of themselves, people sometimes behave in ways that will create certain impressions in others’ eyes.

Brown suggests (1997) that individuals and organizations “possess identities that are preserved through individual and social processes of self-esteem regulation” (p. 643). Therefore, although impression management theory was primarily studied at the individual level and juxtaposed with theories from the social psychology literature (see, e.g., Giacalone and Rosenfeld, 1989; Ginzler et al., 1992), it can also be effectively applied to increase understanding of group and organizational behavior. As a result, impression management research at the more macro, organizational level has flourished in the last two decades (see, e.g., Salancik and Meindl, 1984, Sutton and Callahan, 1987; Neu et al., 1998; Sydserff and Weetman, 2002; Bansal and Clelland, 2004).

This growth in organizational impression management research has also led to several studies examining the various strategies that help organizations enhance and preserve their image.

Deegan and Gordon, 1996; Walden and Schwartz, 1997; Warsame et al., 2002) or to manage public impressions (Neu et al., 1998).

For example, organizations often use shareholder meetings, press releases, annual reports and other corporate documents to shape the perception of the public about their image (Elsbach and Sutton, 1992; Ginzler et al., 1992; Elsbach, 1994). On the other hand, impression management strategies, such as excuses, justifications, concession, apologies, and denials are often used to influence stakeholder perceptions of the firm (Ginzler et al., 1992).

Prior research on the measurement of environmental disclosure

Methods used to *measure* environmental disclosures, whether in annual reports, 10-K reports or other official corporate accounting releases, have generated substantial debate among researchers. This is due mainly to a lack of consistency between different studies regarding the way corporate accounting reports' content has been analyzed leading to associated measurement reliability issues (Milne and Adler, 1999; Unerman, 2000). This debate is important because content analysis is a "research technique for making replicable and valid inferences from data according to their context" (Krippendorff, 1980, p. 21). Milne and Adler (1999) argue that prior SEA research shows "unevenness in regard to dealing with matters of reliability and replicability" (p. 238). When concern is shown, the focus is solely on the reliability of the data used in the particular study. While some studies report the use of multiple coders and explain their coding rules to address reliability issues (see, e.g., Hackston and Milne, 1986; Gray et al., 1995a), others provide little or no explanation of how the coded data can be considered reliable (see, e.g., Freedman and Jaggi, 1988; Neu et al., 1998; Trotman and Bradley, 1981).

Al-Tuwaijri et al. (2004) and Smith and Taffler (2000) distinguish disclosure measurement techniques for environmental disclosure content analysis into two distinctive groups. The first group uses a disclosure-scoring measure index derived from pure content analysis or a "meaning oriented" (subjective) analysis (Smith and Taffler, 2000, p. 627). With

this technique, the examination focuses primarily on the underlying themes or topics themselves that are textually present in the disclosures of interest. Researchers identify a certain number of environmental issues of interest to determine whether or not such topics are addressed or discussed by corporate managers in their environmental disclosures. Accordingly, a scoring index categorizing those themes is designed and researchers assess the presence or the absence of each identified item in the disclosures using a “yes/no” (or 1, 0) coding methodology. After their quantification, an aggregate score is determined for each firm in the sample, generally labeled as the disclosure score variable (see, e.g., Ingram and Frazier, 1980; Wiseman, 1982; Barth et al., 1997; Patten and Trompeter, 2003; Cho et al., 2006; Cho and Patten, 2006). Recent studies have modified the traditional content analysis scoring method. For example, different levels or weights are assigned according to whether the disclosure contained monetary, quantitative or qualitative terms (see, e.g., Choi, 1999; Al-Tuwaijri, 2004), or whether the disclosures were descriptive, vague or immaterial (see, e.g., Hughes et al., 2001).

The second approach measures the quantity of environmental disclosures, generating discussion among researchers about which is the optimal “unit of analysis” (see Milne and Adler, 1999). Disclosures have been measured by counting the number of words (see Deegan and Rankin, 1996; Neu et al., 1998), number of sentences (see Hackston and Milne, 1996; Buhr, 1998; Tsang, 1998), or number of pages (see Guthrie and Parker, 1989; Patten, 1992, 1995). The disclosure measure may also be calculated as the percentage of pages (see Gray et al., 1995b, O’Dwyer and Gray, 1998) or the percentage of total disclosures⁶ (see Trotman and Bradley,

⁶ The percentage of pages is computed as the number of pages (or fractions of pages) dedicated to discussions about social and environmental issues over the total number of pages of the report analyzed. Similarly, the percentage of total disclosures is determined by the total amount of social and environmental disclosures (on a line-by-line or sentence-by-sentence basis) over the total amount of discussions on all issues.

1981). Smith and Taffler (2000, p. 627) refer to this approach as “form oriented” (objective) analysis. This count method solely focuses on the extent of disclosures. After a thorough review of different units of analysis, Milne and Adler (1999) prescribe using sentence counts for both coding and measurement because they offer “complete, reliable and meaningful data for further analysis” (p. 243).

While both the themes (“what”) and the amount (“how much”) of disclosures are important for firm managers and accounting report users, some measurement concerns related to validity and reliability seem to persist. For the “meaning oriented” (subjective) analysis (Smith and Taffler, 2000, p. 627), the problem appears to lie in the intrinsic human subjectivity when coding the narratives or determining the absence or the presence of sought themes (Krippendorff, 1980). This need for the researchers’ judgment can cause some inherent reliability issues, even with the use of several coders (see discussion above). As to the “form oriented” (objective) analysis (Smith and Taffler, 2000, p. 627), solely focusing on the amount of environmental disclosure in a given accounting report can be misleading. For instance, if companies provide a large quantity of environmental information expressed in a language that is biased and/or obfuscating, the validity of this disclosure measurement may be questionable. I suggest that accounting narratives such as environmental disclosures need to convey all information in a transparent and unbiased fashion (“how”) for the best interest of firm stakeholders (see note 2). First, they must meet certain readability and understandability expectations. Second, in terms of general verbal tone and structure, they must remain consistent, objective and neutral vis-à-vis external factors such as firm performance or time. Thus, a syntactic type of analysis looking at factors such as the choice of words, sentence structure, grammar, transitivity and verbal tone is

deemed useful as one would expect business disclosures to “tell it like it is” (Ober et al., 1999, p. 280).

Development of hypotheses

As discussed earlier, prior research shows that organizations have adopted a number of impression management tools and strategies to successfully maintain or enhance their image (see, e.g., Elsbach and Sutton, 1992; Ginzel et al., 1992; Elsbach, 1994). Additionally, several analyses of annual report narratives in relation to firm performance (see, e.g., Kohut and Segars, 1992; Thomas, 1997; Smith and Taffler, 2000; Sydserff and Weetman, 2002) report that the use of certain language characteristics helps corporations shape perceptions vis-à-vis their stakeholders. As part of impression management theory, I identify three constructs of interest. These are obfuscation, distance and bias. I then define the measurements of these constructs and develop hypotheses accordingly. A summary of the constructs, measurements and hypotheses is depicted in Figure 1 of this paper.

Obfuscation hypothesis

Adelberg (1979) stated that “the placing of managers in complete control of the accounting communication process which monitors their performance breeds a situation wherein it is perfectly natural to expect that some managers would obfuscate their failures and underscore their successes” (p. 187). In line with this argument, Courtis (1998) noted that the information asymmetry between the managers who write accounting report disclosures and the stakeholders who read them provides the basis for the obfuscation hypothesis. Simply put, the obfuscation hypothesis suggests that corporate managers are not neutral in the presentation of their company’s disclosures and may use a writing style that is less easy to read and understand when

firm performance is declining. Similar to impression management tactics such as excuses, justifications, apologies or denials (see Ginzel et al., 1992), organizational actors may “seek to divert the attention of readers from the full impact of negative news by incorporating variable degrees of reading together with more difficult to read passages” (Courtis, 1998, p. 467). Although mixed results have been reported⁷, obfuscation can be viewed as another impression management tool used to disguise negative performance. When applied to SEA research and the present study, this notion can be translated into the expectation that when facing poor or negative environmental performance, firms will present their environmental disclosure to stakeholders in a relatively more obfuscating way in order to mitigate negative repercussions and manage public impressions by, for example, “reducing a reader’s desire to investigate more closely” (Courtis, 1998, p. 462).

The obfuscation hypothesis has been empirically tested and operationalized with a measure of readability. The readability of accounting narratives, such as the annual report chairman’s statements or other sections, has been examined in relation to press coverage (see, e.g., Courtis, 1998) and financial performance (see, e.g., Baker and Kare, 1992; Subramanian et al., 1993), and longitudinally in various countries (see, e.g., Jones, 1988, Courtis, 1995, Chan et al., 1996). Accordingly, I state my first hypothesis as follows:

H₁: The readability of 10-K report environmental disclosures will be positively related to firm environmental performance.

⁷ For example, Courtis (1998) reported that while the level of press coverage appeared to be significantly associated with readability of the Chairman’s message, no significant association was found between readability and financial performance (measured by corporate profitability). Sydserff and Weetman (2002) found significant differences in manager’s report Flesch readability scores across long-term financial performance but not across short-term measures.

Distance hypothesis

Stephens et al. (2005) examined communication strategies used by organizations during crises that involve technical details. Because companies can best protect their image by modifying the public perceptions of who is responsible for the crisis (Coombs, 1995), they would develop various strategies, in an attempt to influence those perceptions (Stephens et al., 2005). One of these tactics, distance strategies is designed to (1) weaken the link between the crisis and the organization, (2) minimize the organization's responsibility by portraying the crisis as unintentional (excuse) or due to external forces (justification) and (3) detach the organization from any type of accountability or negative performance (Stephens et al., 2005). As an alternate strategy, Sydserff and Weetman (2002) found that verbal voice was a "particular linguistic dimension that is exploited by management as an impression management strategy in accounting narratives" (p. 536). When applied to SEA and the present study, this notion can be translated into the expectation that when facing poor or negative environmental performance, firms will present their environmental information to stakeholders in a more "detached style, indicative of management to distance itself from the message communicated" (Sydserff and Weetman, 2002, p. 536).

More specifically and syntactically speaking, this detachment is characterized by the utilization of passive constructions and measured by the transitivity index (Sydserff and Weetman, 2002). While the active voice (especially active verbs) promotes the idea that a company is moving forward and is aggressive and successful in the marketplace, the use of passive voice is reserved for occasions when it is beneficial to be distanced and decoupled from the message (Thomas, 1997). Passive voice gives text a "vener of objectivity, neutrality, scientific 'truth' or 'fact'" (Carter et al., 1997, p. 224). For example, Thomas (1997), in her

study of the transitivity of annual letters to stockholders argued that “as the news becomes more negative, linguistic structures suggest a factual, objective situation caused by circumstances not attributable to any persons who might otherwise be thought responsible” (p. 47). Her results indicated a 50% to 100% increase of passive voice usage in the two years in which the company lost money. Passive voice or transitivity can thus be used as another means to alleviate the effects of poor performance and manage impressions. My second hypothesis is stated as follows:

H₂: The transitivity of 10-K report environmental disclosures will be negatively related to firm environmental performance.

Bias hypothesis

Aerts (1994) used the term “bias” in the way Schlenker (1980) defined it: “A bias in the interpretation and explanation of events is a subjective tendency to prefer one interpretation over another; such an interpretation may or may not be an error according to some ‘objective’ criterion for assessing the event” (p. 205). He examined the presence of accounting bias in annual reports from an impression management perspective and argued that managing impressions can be effectively accomplished with the use of a biased accounting language because explanations of organizational events and performance in annual reports are “not simply the outcome of a straightforward data analysis process” (1994, p. 337). Accounting disclosures are not always straightforward and may be influenced by verbal nuances that affect the tone of the narratives. They can be systematically biased because of their rationalizing capacities, their ability to avoid responsibility assignments and their inherent ambiguity, which constitute “interrelated performative characteristics of accounting explanations which make them

particularly apt to confront and appease a negative performance environment” (Aerts, 1994, p. 341).

As Aerts (1994) suggests, the coping strategies people express in their behavior can become visible through systematic biases in the explanations. In other words, the more firm performance differs from a desired benchmark, the more management is motivated to manage impressions, and the larger the size of the accounting bias. Bias has been demonstrated in the context of annual reports and shows a general tendency to attribute negative performance effects to external causes and positive results to internal factors, promoting an optimistic view of the company. It can thus be assumed that a positive outlook such as the identification with “symbols, values and institutions which have a strong base of social legitimacy” (Dowling and Pfeffer, 1975, p. 127) requires the use of biased language, especially when performance is negative. The emphasis on favorable outcomes, while downplaying the negatives, resembles the notion of “optimism” as it is used in the Diction program (and only as it is so used). In this context, “optimism” refers to a language “endorsing some person, group, concept, or event, or highlighting their positive entailments” (Hart, 2001, p. 247) and is deemed appropriate to be used as a measure of biased language. I state my hypothesis H_{3a} as:

H_{3a}: The optimism exhibited in 10-K report environmental disclosures will be negatively related to firm environmental performance.

Similarly, biases in accounting narratives can also be regarded as purposive impression management behavior (Aerts, 2005). He suggested that depending on the social context, a different logic for assertive attributional tendencies should be modeled as a test of accounting bias. His results revealed that the degree of assertiveness of the bias was significantly impacted by an environment where motives for external impression management were strong and that

these results supported its motivational interpretation. Assertiveness, which influences bias to a certain extent, can be closely associated with the notion of tenacity and insistence. As such, accounting bias can also draw on the notion of “certainty,” deemed as an appropriate measure of the construct. As it used in the Diction program (and only as it is so used), the term “certainty” refers to a language indicating “resoluteness, inflexibility, completeness, and a tendency to speak ex cathedra” (p. 246). Although Ober et al. (1999) reported that certainty in public business discourse does not appear to be affected by financial performance (i.e., profitability), I investigate the relationship between the use of certainty in environmental disclosure and firm environmental performance, as hypothesized in H_{3b} below. Because certainty is more likely to be prevalent when the performance is positive, I state my hypothesis H_{3b} as:

H_{3b}: The certainty used in 10-K report environmental disclosures will be positively related to firm environmental performance.

Methods and analysis

Sample selection

To be included in this study, sample firms had to meet the following criteria:

1. They had to be listed in the 2002 ratings of corporate social and environmental performance compiled by KLD Research Analytics, Inc. (hereafter, “KLD”).
2. They had to have a fiscal year ended June 30, 2002 or later⁸.
3. They had to be listed on the Standards and Poor’s 500 index for fiscal year 2002.
4. They had to have a 2002 10-K report available on the SEC’s EDGAR database.
5. They had to have 10-K environmental disclosures of at least 100 words⁹.

⁸ A fiscal year-end subsequent of June 30, 2002 better reflects and matches 2002 firm environmental disclosure in relation to its 2002 environmental performance.

⁹ According to Courtis (1998), the Flesch formula approach requires selecting text passages of at least 100 words for measurement. In addition, this length criterion appears to be adequate for the analysis and measure of transitivity and bias (using Diction, which extrapolates a text into a 500-word norm prose). It is also important to note that

A total of 221 firms met all five criteria and constitute the final sample. Sample firms ranged in size (based on 2002 revenue levels) from \$512 million to \$184,214 million, with a mean (median) of \$13,235 million (\$6,149 million). Summary data on the sample firms are provided in Table 1.

Computerized content analysis

The benefits of automatic, computerized text coding and the much reduced need for human intervention and judgment are significant (Smith and Taffler, 2000). Computer-based methods may not be the perfect solution to analyze texts since they may be appropriate for some tasks more than others and the famous phrase “garbage, in, garbage out” still holds (Diefenbach, 2001). Nonetheless, the social science literature appears to have accepted and extensively used computer-based methods for several decades, notably in political science (see, e.g., Fan, 1988; Narcos et al., 1991), psychology (see, e.g., Rush et al., 1974; Gervasio et al., 1992; Gottschalk, 1995) and management accounting (see, e.g., Abernethy et al., 2005). The advantages to computerized content analysis are summarized in Appendix A.

avoidance (i.e., providing no environmental disclosure) is viewed as an impression management and legitimacy tool (see, e.g., Deegan, 2002). However, I excluded firms using this tactic from the sample because the focus of this study was to analyze the language of environmental disclosures that are actually provided by firms.

Table 1: Descriptive statistics

<i>n</i> (sample size)	221
<i>Firm size</i> (2002 revenues)	
Mean	\$13,235 million
Median	6,149 million
Standard deviation	24,203 million
Firms from environmentally sensitive industries (chemical, metals, paper, mining, petroleum)	52
<i>KLD environmental concern ratings</i>	
Mean	1.03
Standard deviation	1.291
<i>Environmental disclosure readability score</i>	
Mean	7.26
Standard deviation	6.552
<i>Environmental disclosure transitivity score</i>	
Mean	22.9
Standard deviation	12.553
<i>Environmental disclosure certainty score</i>	
Mean	50.26
Standard deviation	3.8
<i>Environmental disclosure optimism score</i>	
Mean	48.08
Standard deviation	2.39

Environmental disclosure

I identify environmental disclosures in the 10-K reports¹⁰ for the same fiscal year as the year of interest (i.e., 2002) because I hypothesize direct disclosure/performance relationships and

¹⁰ Because of the SEC disclosure requirements (see discussion in note 1 above), I examine environmental disclosures included in section 1 (Description of Business), section 3 (Legal Proceedings) and section 7 (Management's Discussion and Analysis of Financial Condition and Results of Operations).

examine how impressions are managed (i.e., measured by readability, transitivity, optimism and certainty) in relation to the information presented.

The disclosure measurements for readability and the transitivity index were computed using the Microsoft Word Readability Statistics package. The Flesch Reading Ease formula score and the percentage of passive sentences used were the proxies for readability level and transitivity index, respectively. These tools have been used previously to measure the level of readability and understandability of accounting narratives (see, e.g., Jones, 1988; Smith and Taffler, 1992; Curtis, 1998). According to Curtis (1998), the Flesch Reading Ease formula¹¹ attempts to predict the likelihood that a target audience would be able to read and understand a text passage and “has been the dominant choice of researchers, essentially because of its computational ease, general understandability, and comparability with other similar studies” (p. 459). The computation of the percentage use of passive voice (i.e., transitivity index) component of the Microsoft Word Readability Statistics package accurately and consistently determines the proportion of passive voice usage in a given prose passage.

Diction, developed by Dr. Roderick Hart, is a dictionary-based, computerized content analysis software that examines a text for its verbal tone across five variables: certainty, optimism, activity, realism, and commonality (Hart, 2000a; 2000b; 2001; Sydserff and Weetman,

¹¹ About 82 elements of style have been examined and 67 versions of readability formula have been developed (Klare, 1964; 1974), which led to computer-based versions of readability formulas. Different readability formulas arise because of different measures of “word length” and different weightings applied to the component parts. The Flesch Reading Ease formula score itself uses a combination of sentence length and syllable count. It is expressed as $206.835 - 84.6W - 1.015S$, where W (average number of syllables per word) is the number of syllables divided by the number of words and S (average sentence length) is the total number of words divided by the total number of sentences. The calculation represents a deduction from the base constant for both word and sentence complexity, so that the higher the score the easier the readability, i.e., 80+ for comic journals, but less than 50 for academic literature, and less than 30 for technical and scientific articles. Most accounting communications have been shown to record scores of less than 50, some of less than 30 (Smith and Taffler, 1992; Jones, 1988).

2002). Diction¹² deploys some 10,000 search words in 33 separate dictionaries. None of the search terms is duplicated in these lists, which enables the user to get a rich understanding of a text passage. Similar to computerized readability formulas' features, the program is relatively easy to use and offers reliability and objectivity (Sydserff and Weetman, 2002). Since Diction is able to separately assess the five verbal tone master variables (and subaltern variables), I select the measurements related to my third hypothesis, which are certainty and optimism scores (see H_{3a} and H_{3b}). It must also be noted that a distinct feature of Diction 5.0 is the option to extrapolate a particular text to a 500-word norm "equivalent" (which is the basic unit of analysis) so that input texts of any length can be measured consistently.

Environmental disclosure readability scores ranged from 0 to 29; transitivity index measures from 0 to 71; certainty scores from 33.84 to 68.23; and optimism scores from 40.21 to 59.16. The sample mean disclosure scores were 7.29, 22.9, 50.26 and 48.08, for readability, transitivity, certainty and optimism, respectively.

Environmental performance

Although a number of external corporate social and environmental performance (SEP) evaluations have been published over the past 30 years, most have been limited to a relatively small number of companies, or have focused on only smaller subsets of performance. In response to this need, the independent ratings firm KLD¹³ has, since 1994, maintained a database

¹² The Diction program is driven by the five master variables, which are created by combining (after standardization) the subaltern variables. These variables were selected under the assumption that, if only five questions could be asked of a given passage, these five would provide the most robust understanding. A typical Diction output generally includes the names of the variables (and subaltern variables), their frequency, the percentage of words analyzed, the normal score range, the standard range and whether they are out of range. Diction is also able to make the conversion, transfer, import and export of texts and data with other computer programs (e.g., Excel, SPSS) easy and user-friendly (Hart, 2000a; 2001). A comprehensive overview of Diction is provided in Appendix B.

¹³ The professional services firm of KLD Research and Analytics, Inc. is located at 250 Summer Street, Boston, MA 02210, USA. KLD's social research is distributed in SOCRATES - The Corporate Social Ratings MonitorSM.

that appears to overcome these problems. KLD independently rates hundreds of companies traded on U.S. stock exchanges¹⁴ in terms of their social performance across a range of dimensions related to stakeholder concerns. The company draws upon a variety of sources to capture relevant social performance data (Waddock and Graves, 1997; Hillman and Keim, 2001). Because the KLD database provides a quantifiable and enhanced corporate SEP measure and preserves its independent rating system (see Hillman and Keim, 2001), the KLD data have been extensively used in U.S. management research on corporate social performance issues (e.g., Griffin and Mahon, 1997; Waddock and Graves, 1997; Greening and Turban, 2000) and recently used in environmental accounting research (see Cho et al., 2006; Cho and Patten, 2006). KLD separately assigns strengths and concerns across seven SEP categories¹⁵ and gives a score of zero or one for each of the strength and concern areas included in each category.

Given the apparent benefits of the KLD ratings and because my focus is on examining the relationship between firm environmental performance and the extent of obfuscation, distance and bias of environmental disclosure, I use this database to identify environmental performance for my sample firms. KLD analyzes corporate environmental performance based on an extensive assessment of each company's environmental management, planning and impact assessment, utilization of resources, compliance with applicable laws and regulations, and emissions.

Concern ratings are generally assigned to companies that (1) reveal poor compliance records

SOCRATES is a proprietary database program that provides access to KLD's ratings and other data pertaining to the social records of over 3,000 publicly traded U.S. companies (KLD, 2003).

¹⁴ As of 2002, the academic spreadsheets are a summary of strengths and concerns assigned to approximately 1100 Socrates companies listed on the S&P 500, Domini 400 Social Index, Russell 1000, or KLD Large Cap Social Indexes as of December 31st of each year. Prior to 2002, the spreadsheets contain data from approximately 650 companies listed on the S&P 500 or Domini 400 Social Indexes as of August of each year (KLD, 2003).

¹⁵ KLD's social responsibility categories include community, corporate governance, diversity, employee relations, environment, human rights, and product (KLD Research & Analytics, 2003).

with environmental laws and regulations; (2) emit hazardous or toxic substances and waste in large quantities; (3) fall behind their industry competitors in implementing preventive measures to reduce environmental impact; and/or (4) generate a significant portion of their revenues from products or services that negatively affect the environment. More specifically, KLD concern ratings from 2002 were used for comparisons with the different 2002 10-K report environmental disclosure scores. Sample scores ranged from 0 (i.e., no environmental concern) to 5 (i.e., high environmental concern) with a mean score of 1.03.

Control variables

Prior research documents that the extent of environmental disclosure (as previously measured in “form” or “meaning” oriented) is significantly related to firm size and industry type. That is, the expectation is that firms with higher visibility and operating in industries that are more sensitive to environmental laws and regulations will tend to disclose more extensive environmental information (see, e.g., Patten, 1992; Deegan and Gordon, 1996; Hackston and Milne, 1996; Walden and Schwartz, 1997; Patten, 2002; Cho and Patten, 2006). Similarly, these factors were found to also impact the readability (see, e.g., Jones, 1988; Subramanian et al., 1993) and bias (see, e.g., Aerts, 1994) of such environmental information. In addition, prior results on the use of passive voice, as measured by the transitivity index (see, e.g., Thomas, 1997; Sydserff and Weetman, 2002), lead to the conjecture that it is also inherently affected by firm size and industry¹⁶. Therefore, I determined that it would be necessary to control for the effects of size and industry type in each of my models. In addition, because the Flesch Reading Ease formula score is a direct function of the average sentence length and average syllables per

¹⁶ For instance, large or small firms from certain specific industries may use a language that inherently uses more passive voice in general.

word, the length of the disclosure text may affect the readability score (see, e.g., Harrison, 1980; Curtis, 1998). Thus, I control for this variable for the test of the relation between readability and environmental performance only (i.e., H₁).

Firm size is measured by taking the natural log of the 2002 revenues. For industry membership, I label the chemical (primary SIC code 28xx, excluding pharmaceutical, code 283x), metals (33xx), mining (10xx), oil exploration (13xx), paper (26xx), and petroleum (2911) industries as “environmentally sensitive industries”. I use a dichotomous one/zero coding scheme to separate firms that operate in this group from their counterparts operating in non-environmentally sensitive industries. A total of 52 of the 221 sample firms were from environmentally sensitive industries. Environmental disclosure length is measured by the number of sentences included in the environmental disclosure text.

Statistical analysis

Ordinary least squares multiple regression is used to identify the relation between environmental performance and the different characteristics of firm environmental disclosure.

The models are stated as:

$$(1) \text{ EDR}_i = a_1 + B_1\text{EP}_i + B_2\text{SIZE}_i + B_3\text{IND}_i + B_4\text{LENGTH}_i \text{ to test H}_1$$

$$(2) \text{ EDT}_i = a_1 + B_1\text{EP}_i + B_2\text{SIZE}_i + B_3\text{IND}_i \text{ to test H}_2$$

$$(3a) \text{ EDC}_i = a_1 + B_1\text{EP}_i + B_2\text{SIZE}_i + B_3\text{IND}_i \text{ to test H}_{3a}$$

$$(3b) \text{ EDO}_i = a_1 + B_1\text{EP}_i + B_2\text{SIZE}_i + B_3\text{IND}_i \text{ to test H}_{3b}$$

where

EDR_{*i*} = the 2002 environmental disclosure readability score for firm *i*,
EDT_{*i*} = the 2002 environmental disclosure transitivity score for firm *i*,
EDC_{*i*} = the 2002 environmental disclosure certainty score for firm *i*,
EDO_{*i*} = the 2002 environmental disclosure optimism score for firm *i*,
EP_{*i*} = the 2002 KLD environmental concern score for firm *i*,
SIZE_{*i*} = the natural log of 2002 revenues for firm *i*, and

IND_i = one if firm i belongs to an environmentally-sensitive industry, and zero otherwise.
 $LENGTH_i$ = the number of sentences included in the 2002 environmental disclosure text for firm i .

Because firms with a *negative* performance reflect a *higher* environmental concern score, a positive relation between the EP variable and the EDT and EDO variables, respectively, is expected. Further, a negative relation is predicted between the EP variable and the EDC variable. In addition, as the EDR variable increases as the narrative becomes easier to read, a negative relation between EP and EDR is also predicted.

Results

Table 2 presents the results of the regression analysis to test H_1 . As shown in the table, the model is significant (based on the model F-statistic) with an adjusted- R^2 of 0.121. The LENGTH control variable is significantly related to the readability score, and indicates that disclosure texts with more sentences are more readable than lower-sentence narratives. This may be explained by the way the Flesch readability score is computed (based on average sentence length and average syllables per word, as mentioned above). Even after controlling for the number of sentences, it appears that longer disclosure texts are assigned a higher readability score. The IND control variable is negatively and significantly related to the Flesch readability scores of environmental disclosure ($p < .01$, one tailed), whereas SIZE is not significant. This suggests that whether firms are larger or smaller, 10-K report environmental disclosure is more obfuscating for firms from environmentally sensitive industries (as defined above) than their non-environmentally sensitive industry counterparts. The test variable EP is negatively related to EDR, indicating that poorer environmental performers make their environmental disclosure

more difficult to read, but it is not significant¹⁷. Thus, H₁ is not supported. These results are similar to some of the mixed findings reported in the accounting narrative literature (see, e.g., Curtis, 1998; Sydserff and Weetman, 2002).

Results of the analysis for the transitivity hypothesis (H₂) are reported in Table 3. The model F-statistic is not significant (based on the model F-statistic). Both the test and control variables also are not significant. This implies that there is no association between the level of passive voice usage in environmental disclosure (as measured by the transitivity index score) and environmental performance, industry membership and size. Thus, H₂ is not supported. This result is in contrast with Thomas (1997) and Sydserff and Weetman (2002), who found that negative/poor financial performance led to a significant increase in the use of passive voice in annual report chairman's message or message to stockholders. One plausible explanation of this lack of correlation could be that the style and nature of 10-K environmental disclosure narratives are unique to each firm, regardless of their respective environmental performance, size or industry membership.

¹⁷ A sensitivity test was also run by including the interaction variable EPxIND in the model. While the significance and direction of the coefficients remained the same, the interaction variable was not significant.

Table 2: Results of OLS regression analysis testing the relation between environmental performance and environmental disclosure readability ($EDR_i = a_1 + B_1EP_i + B_2SIZE_i + B_3IND_i + B_4LENGTH_i$)

<i>Model explanatory power</i>				
Number of observations				221
Model <i>F</i> -statistic				8.599
Significance of <i>F</i> -statistic				0.000
Adjusted <i>R</i> -squared				0.121
<i>Parameter estimates</i>				
Variable	Predicted sign	Parameter estimate	<i>t</i> -statistic	Statistical significance*
INTERCEPT	None	2.329	0.636	0.526
EP	(-)	-0.300	-0.724	0.235
SIZE	(-)	0.447	1.065	0.144
IND	(-)	-2.802	-2.754	0.003
LENGTH	None	0.050	4.803	0.000
* Significance levels are based on a one-tailed test for the EP, SIZE, IND and LENGTH variables.				
EDR _{<i>i</i>} = the 2002 environmental disclosure readability score for firm <i>i</i> ,				
EP _{<i>i</i>} = the 2002 KLD environmental concern score for firm <i>i</i> ,				
SIZE _{<i>i</i>} = the natural log of 2002 revenues for firm <i>i</i> , and				
IND _{<i>i</i>} = one if firm <i>i</i> belongs to an environmentally-sensitive industry, and zero otherwise.				
LENGTH _{<i>i</i>} = the number of sentences included in the 2002 environmental disclosure text for firm <i>i</i> .				

Table 3: Results of OLS regression analysis testing the relation between environmental performance and environmental disclosure transitivity ($EDT_i = a_1 + B_1EP_i + B_2SIZE_i + B_3IND_i$)

<i>Model explanatory power</i>				
Number of observations				221
Model <i>F</i> -statistic				0.223
Significance of <i>F</i> -statistic				0.880
Adjusted <i>R</i> -squared				0.003
<i>Parameter estimates</i>				
Variable	Predicted sign	Parameter estimate	<i>t</i> -statistic	Statistical significance*
INTERCEPT	None	21.930	2.949	0.002
EP	(+)	0.079	0.107	0.458
SIZE	(+)	0.059	0.069	0.472
IND	(+)	1.566	0.749	0.227
* Significance levels are based on a one-tailed test for the EP, SIZE and IND variables.				
EDT_i	= the 2002 environmental disclosure transitivity score for firm <i>i</i> ,			
EP_i	= the 2002 KLD environmental concern score for firm <i>i</i> ,			
$SIZE_i$	= the natural log of 2002 revenues for firm <i>i</i> , and			
IND_i	= one if firm <i>i</i> belongs to an environmentally-sensitive industry, and zero otherwise.			

Table 4 presents the results of the regression analyses testing the bias hypothesis (both H_{3a} and H_{3b}). As highlighted in panel A of Table 4, the model is significant (based on the model *F*-statistic). Control variable SIZE is significant whereas IND is not. This can be interpreted as indicating that larger firms, whether they are from environmentally sensitive industries or not, exhibit a higher level of optimism in their 10-K report environmental disclosure. More importantly, firm environmental performance is, as hypothesized, positively associated with the optimism level of environmental disclosure (EDO), and significant at the $p < .001$ level, one-tailed. This supports the argument that poorer environmental performers use a more optimistic

language tone when writing their environmental disclosures. Panel B presents test results of the certainty hypothesis (H_{3b}). As noted in the table, the model is significant (based on the model F-statistic). Control variables SIZE and IND are not significant, suggesting that the level of certainty exhibited in environmental disclosure is not affected by the size or the industry of the company. However, firm environmental performance is significantly related to environmental disclosure certainty level ($p < .05$, one-tailed) and is negative. This result indicates that firms with lower environmental performance use less certainty language in their 10-K environmental disclosures than their better-performing counterparts. These results thus provide evidence that, as predicted, there is a significant relationship between firm environmental performance and the use of biased language in 10-K report environmental disclosures.

Table 4: Results of OLS regression analysis testing the relation between environmental performance and environmental disclosure bias (as measured by optimism and certainty)

Panel A – Optimism ($EDO_i = a_1 + B_1EP_i + B_2SIZE_i + B_3IND_i$)				
<i>Model explanatory power</i>				
Number of observations				221
Model <i>F</i> -statistic				7.903
Significance of <i>F</i> -statistic				0.000
Adjusted <i>R</i> -squared				0.086
<i>Parameter estimates</i>				
Variable	Predicted sign	Parameter estimate	<i>t</i> -statistic	Statistical significance*
INTERCEPT	None	44.313	32.957	0.000
EP	(+)	0.358	2.684	0.004
SIZE	(+)	0.376	2.425	0.008
IND	(+)	0.333	0.880	0.190
Panel B – Certainty ($EDC_i = a_1 + B_1EP_i + B_2SIZE_i + B_3IND_i$)				
<i>Model explanatory power</i>				
Number of observations				221
Model <i>F</i> -statistic				2.158
Significance of <i>F</i> -statistic				0.094
Adjusted <i>R</i> -squared				0.016
<i>Parameter estimates</i>				
Variable	Predicted sign	Parameter estimate	<i>t</i> -statistic	Statistical significance*
INTERCEPT	None	50.609	22.784	0.000
EP	(-)	-0.421	-1.911	0.029
SIZE	(-)	0.026	0.100	0.460
IND	(-)	-0.617	-0.069	0.162
* Significance levels are based on a one-tailed test for the EP, SIZE and IND variables.				
EDO_i	= the 2002 environmental disclosure optimism score for firm <i>i</i> ,			
EDC_i	= the 2002 environmental disclosure certainty score for firm <i>i</i> ,			
EP_i	= the 2002 KLD environmental concern score for firm <i>i</i> ,			
$SIZE_i$	= the natural log of 2002 revenues for firm <i>i</i> , and			
IND_i	= one if firm <i>i</i> belongs to an environmentally-sensitive industry, and zero otherwise.			

Ad hoc analyses

In order to obtain additional insights about the insignificant results of H₁ and H₂, I conducted ad hoc analyses for each hypothesis.

For H₁, I selected a sample of firms for which the environmental performance and its corresponding readability score were in the most opposite expected direction. As such, examined firms were those with no environmental concern and a Flesch readability score of zero (group 1), as well as firms with high environmental concern and a high Flesch readability score (group 2)¹⁸. The analysis shows that the average length of environmental disclosures from group 1 firms was 355.4 words and 11.7 sentences, while those in group 2 were 2,190 words and 82.1 sentences. This result implies that firms disclosing environmental information in a few, longer sentences would be assigned a lower readability score than those disclosing a larger amount of information in shorter sentences. Overall, this constitutes a limitation of the use of the Flesch formula when specifically used to measure 10-K environmental disclosures.

Similarly, for H₂, I selected a sample of firms for which the environmental performance and its corresponding transitivity score were in the most opposite expected direction. Therefore, I conducted an analysis of the five firms that had no environmental concern but a transitivity index score greater than 50. In general, I found that such firms provided relatively shorter environmental disclosure (average of 230.6 words and 8.4 sentences). However, a *qualitative* analysis of each firm's disclosure content revealed no particular, common characteristic that could explain the higher frequency of passive voice usage. It thus appears that such usage is merely related to the company's specific writing style of 10-K environmental disclosure narratives.

¹⁸ There were 31 firms with both an environmental concern and a Flesch readability of score zero and 12 firms with an environmental concern score of four or five and a high Flesch readability score.

Discussion, limitation, and future research

The purpose of this study was to test whether impression management theory holds when environmental disclosures are measured for their readability and verbal tone. Because environmental disclosures constitute a mandated and integral part of a company's financial report (annual or 10-K report), the recent Congressional debates focusing on the transparency and accuracy of financial information reporting (see note 2) are pertinent to the issues addressed in this paper. As the common business communication advice is to "avoid hedging" and "tell it like it is" (see Ober et al., 1999), corporate environmental disclosures in general should be understandable, transparent and unbiased. More than financial information, accounting narratives, such as environmental disclosures, give managers ample opportunities to put this advice into practice. My argument is that the *way* (or *how*) information is presented (i.e., word choice, grammar, syntax, verbal tone) in environmental disclosure is equally or perhaps more important than the amount or the thematic content, and that such narrative choice by management is not neutral to firm environmental performance.

In this paper, I investigated the language used by U.S. firms in their 10-K report environmental disclosures. I examined the relationships between environmental performance and different environmental disclosure measurements for a cross-sectional sample of 221 U.S. firms' 10-K reports from 2002 listed on the S&P 500 index. Results of regression analyses indicate that environmental disclosures made by firms operating in environmentally sensitive industries are less readable than those made by their better-performing counterparts. In addition, controlling for firms size and industry type, there is a significant relation between environmental disclosure language bias, as measured by optimism and certainty, and environmental performance. Higher levels of optimism and lower levels of certainty are associated with poor

environmental performance. Overall, these results support the conjecture that firms with poor environmental performance records and operating in environmentally sensitive industries attempt to manage public impressions by using a difficult and biased language in their environmental disclosures. These results extend Patten (2002) in that worse environmental performers not only disclose more extensively but do so using a biased language to mitigate their negative exposure to the social/political environment.

These empirical findings are relevant to the recent information transparency issues raised by the different U.S. accounting regulatory bodies such as the Securities and Exchange Commission, Public Company Accounting Oversight Board, the Financial Accounting Standards Board, and the American Institute of Certified Public Accountants. Despite SEC regulations, firms can freely decide on the content, quantity, language type and verbal tone of their disclosures, making the latter questionable. For instance, the current findings contribute to the impression management argument that extensive *and* biased (more optimistic and less certain) environmental disclosures may be strategically used by companies to offset some of their negative environmental performance.

Limitations of this study primarily lie in the methodologies used to measure the different disclosure variables. There is a concern that the Flesch Reading Ease formula may oversimplify research of readability of technical accounting narratives (see Courtis, 1998) and could be replaced by alternative formulas (see, e.g., Smith and Taffler, 2006). Further, reproducibility issues arise when texts are sampled with readability studies because most readability formulas rely on sampling formulas. Therefore, findings may undermine the reliability of the sampling method used (Jones and Shoemaker, 1994). In addition, readability formulas are often viewed as “rubber yardsticks” because they measure the same sort of syntactic data such as word length

and sentence length (Jones and Shoemaker, 1994, p. 145). The development of a transitivity index based on Microsoft Word Readability package may also need more sophisticated computer-based analyses to capture a more comprehensive of passive constructions (see Sydserff and Weetman, 2002).

In addition, my results are based on a cross-sectional sample. While they may have provided a snapshot of the relationships examined in this paper, I assumed a constant, homogenous level of political pressure in regards to environmental regulation. The extent to which these findings would hold in other periods cannot be determined.

Future research may extend this work to a longitudinal basis, examining the relations between the changes in environmental performance and the changes environmental disclosure language metrics over time. This comprehensive analysis may provide a more complete picture of the impression management strategy and determines whether there are temporal event factors to be considered. Also, future studies may investigate the differences, if any, between the language metrics of environmental disclosures of 10-K reports vs. annual reports, due to their distinct nature (i.e., writing style) and their different audiences. However, based on the current results and ad hoc analyses of this paper, the text length (measured by the number of sentences) should be adjusted to be consistent across firms in order to address validity and reliability issues. Finally, to address measurement issues discussed above, future methodological research may be undertaken to refine the readability and transitivity measures.

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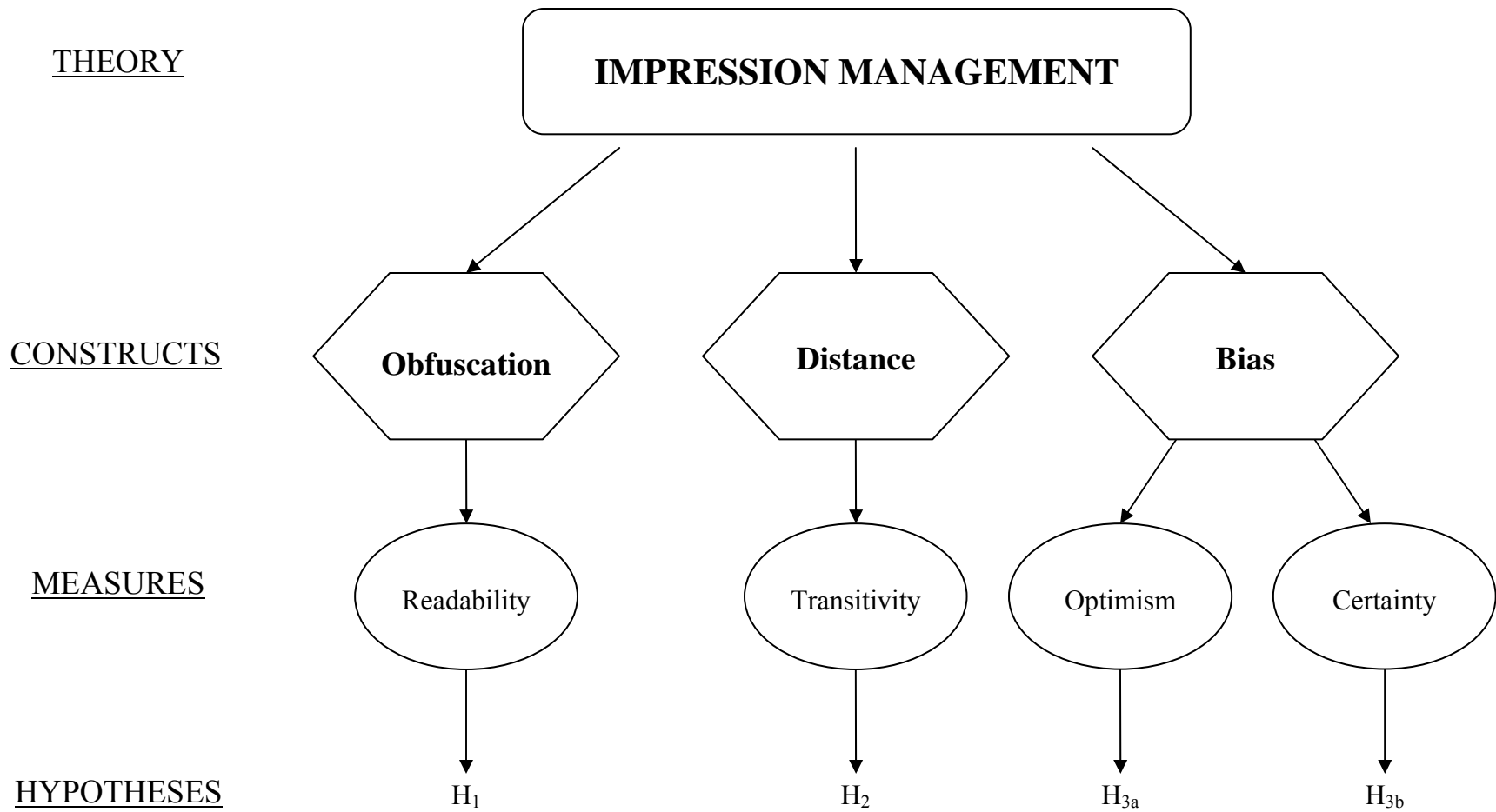


Figure 1: Summary of hypotheses

**STUDY TWO:
ENVIRONMENTAL REPORTING ON THE INTERNET BY AMERICA'S
TOXIC 100: LEGITIMACY AND SELF-PRESENTATION**

Introduction

The latter years of the Twentieth Century witnessed a number of environmental catastrophes (e.g., the 1979 Three Mile Island and 1986 Chernobyl nuclear power plant accidents, the 1984 Bhopal Union Carbide poisonous gas leak, and the 1989 Exxon Valdez and 1999 Erika oil spills) that triggered a visible shift of public concern toward environmental issues and corporate environmental performance (Smith, 2000). These incidents placed significant pressure on companies whose operations inherently harm the natural environment. Wolf (1996) notes, for example, that the Bhopal accident led the U.S. Congress to pass the Emergency Planning and Community Right-to-Know Act of 1986 (hereafter, "EPCRA"), in an attempt "to alleviate the lack of comprehensive emergency response planning and the scarcity of information on dangerous chemical releases around the nation" (p. 219). A major component of the EPCRA was the Toxic Release Inventory (TRI) program, which requires facilities operating in certain industries¹ to annually disclose information related to the release of hazardous chemicals. The TRI database captures and makes available to the public information about the emission levels of certain toxic chemicals (Environmental Protection Agency, 2004).

¹ The TRI reporting requirement applies to facilities with 10 or more full-time employees that manufacture (including importing) or process more than 25,000 lbs/year, or otherwise use over 10,000 lbs/year of a listed chemical, and that are in one of the following sectors: manufacturing, metal mining, coal mining, electrical utilities that combust coal and/or oil, Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste treatment and disposal facilities, chemical and allied products wholesale distributors, petroleum bulk plants and terminals and solvent recovery services (Environmental Protection Agency, 2006).

Parallel to these developments, Internet access has grown tremendously with the estimated number of Internet users worldwide passing the *billion* threshold during 2005 (Internet World Stats, 2006). The explosive growth of the Internet provides companies the opportunity to “disseminate information to a very wide audience of shareholders, potential investors, and other constituents economically, quickly, and in an undiluted fashion” (Antin and Haas, 2001, p. 21). Companies seem to enjoy primarily its less restrictive space, which allows them to (1) make available a broad and deep range of information, (2) make information accessible 24 hours a day from any online computer terminal anywhere in the world, and (3) reach an audience of millions within seconds (Jones et al., 1999). Perhaps not surprisingly, the dissemination of environmental information and reports on Internet corporate websites has become increasingly popular (Jones et al., 1998, 1999; SustainAbility/UNEP, 1999).

SustainAbility/United Nations Environment Program’s (SustainAbility/UNEP) *Internet Reporting Report* (1999, p. 18) notes the potential value of Internet-based disclosure. The group claims:

The Internet will provide both new (increasingly ‘wireless’) channels for existing forms of corporate accountability and help evolve new forms of accountability and corporate governance. Imagine, for example, that a company’s stakeholders had access not only to online data on how it was performing against key sustainability-related targets, but also to instantaneous benchmark results, showing how it measures up against its competitors - and where areas of risk might be.

However, Patten and Crampton (2004) suggest this vision may be overly optimistic based on the growing evidence that, similar to financial report environmental disclosure, Internet environmental disclosure seems to be merely a legitimization device rather than an effort at greater corporate accountability.

The purpose of this study is to extend the legitimacy on the Internet arguments of Patten and Crampton (2004) by examining the content and presentation of corporate website environmental disclosure in relation to firm environmental performance. Firm environmental performance is captured by firm toxic score, a relatively new but more relevant measure based on the TRI data and provided by the Political Economy Research Institute (PERI) at the University of Massachusetts at Amherst. The toxic score is measured by taking into account both the toxicity of specific chemicals and the population exposure in relation to their release location. The PERI aggregates the U.S. Environmental Protection Agency's (EPA) TRI data from the facility level to a parent company level, ranks those firms by toxic score, and publishes the list of the top 100 (i.e., America's Toxic 100) on their own website. The assessment of both the content and the presentation of Internet website environmental disclosure is performed by a comprehensive disclosure evaluation metric that I develop based on the works of Jones et al. (1998), Marston and Polei (2004) and Patten and Crampton (2004). More importantly, I situate Goffman's (1959) sociological theory of self-presentation within the organizational legitimacy framework and apply it to obtain a better understanding of the online environmental reporting motivations and practices of US corporations.

This paper makes contributions to social and environmental accounting research by refining the measures for environmental disclosure on the Internet and utilizing a newly developed measure of environmental performance. Prior research indicates consistency, reliability and validity issues in the measurement of social and environmental disclosures (see, e.g., Milne and Adler, 1999; Unerman, 2000) and environmental performance (see, e.g., Ingram and Frazier, 1980; Hughes et al., 2001;

Patten, 2002a). While I do not claim to overcome those issues in the present study, I introduce new variable measurements and empirically test them here.

In addition, this study also contributes to the accounting information systems (AIS) literature. The advent of the Internet has triggered a novel stream of research in corporate website information disclosure that is increasingly published in top AIS journals. Similar to Internet financial reporting (IFR) (see, e.g., Ashbaugh et al., 1999; Ettredge et al., 2001; Dechow et al., 2002; Marston and Poley, 2004), research in website environmental reporting is expanding rapidly (see, e.g., Jones et al., 1998, 1999; Sustainability/UNEP, 1999; Isenmann and Lenz, 2000; 2001; Patten and Crampton, 2004). The utilization of information systems tools, including the Internet and corporate websites, to communicate information to firm stakeholders appears to warrant additional research classified in the AIS paradigm.

The remainder of the paper proceeds as follows. The next section provides background information and a literature review on Internet environmental reporting. Then, the theoretical frameworks and hypotheses are developed, followed by the research methods and discussion how the analysis is performed. I analyze and present the results in the subsequent section. Finally, a discussion, with limitations and future research opportunities are presented.

Background and prior research

The exponential growth of Internet usage has enabled companies to establish a flexible, reliable, effective (Jones et al., 1998; Shepherd et al., 2001) or even strategic (Wheeler and Elkington, 2001) medium to communicate with their stakeholders and relevant publics (see Roberts, 1992; Neu et al., 1998). One of the Internet tools is the

World Wide Web and its popularity has increased over the last two decades because the corporate website is viewed as “a dynamic and evolving medium” (Ettredge et al. , 2001, p. 150), making company information available to a large audience. Internet websites also may satisfy the demand for quality, timely and easy to obtain information (Foy, 1996) and allow audio/video files, animated graphics and 3D simulations to be connected via hyperlinks (Jones et al., 1998). Corporate website designers utilize these features to exploit the full capabilities of the medium, but also because corporate websites need to provide the ability to access, navigate, and search information from documents that “accommodate hypertext linking, graphics, multimedia, linking to external URLs from within the document, and complex searches” (Rauch et al., 1997).

Growth in the usage of corporate websites has led to the emergence of a research literature stream focusing on Internet financial reporting² (IFR). For example, studies have examined IFR in countries including the US (see, e.g., Ashbaugh et al., 1999; Ettredge et al., 2001; Patten, 2002b), Germany (see, e.g., Marston and Polei, 2004), Spain (see, e.g., Gowthorpe and Amat, 1999), and Sweden (see, e.g., Hedlin, 1999), as well as in companies across different countries (see, e.g., Flynn and Gowthorpe, 1997; Debreceeny et al., 2002). Similarly, there has been a growing interest in corporate social responsibility reporting (including environmental reporting) on the Internet. The issue of satisfying stakeholders’ demands for the dissemination of relevant information through different types of communication media has also been investigated. I proceed with a brief but pertinent literature review on these subjects.

² In general, the potential benefits of IFR, as noted by Ashbaugh et al. (1999), include (1) reduced costs in the dissemination or gathering of information, (2) the ability to communicate with previously unidentified consumers, and (3) the ability to provide more timely financial information to stakeholders.

Zeghal and Ahmed (1990) argued that assessing the scope of corporate social reporting solely on the basis of annual reports is misleading and that managers should perceive the mass media as a more appropriate means of communicating social information. Their results indicated that (1) the informational content and the format of social information disclosure (quantitative, narrative, monetary) were related to the company's operations, and (2) this content was distributed by a medium of communication in a format that was geared toward the target audience.

Azzone et al. (1997) identified eight core company stakeholder groups (academia, employees, environmental NGOs, financial community, local community, regulators and policymakers, shareholders, and trade and industry) and analyzed each of their content requirements and preferred media to receive environmental information. Jones et al. (1998) specified that each of these requirements can be met by using Internet tools such as creating hyperlinks between relevant sections from previous years' reports.

SustainAbility/UNEP (1999) prepared and published the *Internet Reporting Report*. It proposed a five-stage model of corporate environmental reporting³, an important benchmark to evaluate environmental reporting. The model primarily focused on the importance of Internet usage to reach stages 4 and 5, which are "state-of-the-art reporting" and "sustainable reporting", respectively. Survey results indicated that 55% of 150 leading companies provided some form of environmental communication on their Internet websites, while 49% of the sites offered feedback forms to users. The report also noted that the Internet became a medium for increasing corporate social and environmental accountability. The five-stage reporting model is depicted in Appendix D.

³ The advantages of environmental reporting on Internet websites were identified as global reach, immediacy, updatability, transparency, linkability and interactivity.

Williams and Pei (1999) examined the corporate social disclosures on websites and in annual reports of 172 companies from Australia, Singapore, Malaysia and Hong Kong. They found that companies in Australia appeared to provide more corporate social disclosures on their Internet websites than in their annual reports. In Malaysia, the amount of information was found to be almost at the same level in both media, whereas in Hong Kong, websites were utilized less as a medium of social disclosure⁴. Therefore, the country of origin appeared to be a differentiating factor when comparing the utilization of Internet websites vis-à-vis the annual reports.

Isenmann and Lenz (2000) use four headings to classify the benefits of using Internet corporate environmental reports. They are (1) environmental report publication purposes, (2) environmental reporting process, (3) environmental report contents, and (4) environmental report design. In general, the benefits regarding the reporting process are attributed to a company's perspective, while those concerning the contents and the design are of users' interests, and the purposes of environmental report publication may be related to both the company and the users.

Surprisingly, only a few studies investigated the motivations for companies to present social and environmental information on their websites. Jones et al. (1999) examined 275 corporations that had previously published hard copy environmental reports (the sample was drawn from 21 countries across 21 different industries). They found that "a total of 41% of the companies provided little or no environmental information on their website" (1999, p. 77). It was noted that companies were still at an

⁴ This is somewhat consistent with the SustainAbility/UNEP report, which indicated that in Asia, the main stakeholder group targeted was "customers" and environmental disclosure was non-existent or inadequate. As such, it was noted that the reporting in Asia appeared to be lagging behind Western standards.

infancy stage to exploit the full potential of Internet-based environmental reporting. For example, the Internet environmental reporting practices of multinational companies showed a lack of familiarity with the global nature the Internet, foregoing the opportunity to facilitate communication of their activities in developing countries to those countries' stakeholders⁵.

Esrock and Leichty (1998) examined disclosures across 13 different social responsibility areas on Fortune 500 companies' websites and found that corporations used a variety of tools for social disclosure. However, they concluded that despite their flexibility, websites have been used primarily to disseminate social disclosures similar to the traditional, one-way "top-down/information-push" communication.

Finally and more recently, Patten and Crampton (2004) investigated (1) whether the Internet was in fact being used to further environmental communication with stakeholders and (2) whether website environmental disclosure, like financial report environmental disclosure, was merely "a function of corporate attempts at legitimization." Based on their analysis, Patten and Crampton (2004) suggest that SustainAbility/UNEP's views of the Internet as a medium for higher corporate social and environmental accountability may be "overly optimistic" and that the focus of website environmental disclosure appeared to be another tool used to legitimate the corporation rather than adding to accountability.

⁵ Based on this, it might be speculated that there is a chance that technology can transform or at least reveal the global social responsibilities of multinationals and possibly pressure them to upgrade their disclosure in developing countries, if, in fact, the reporting is not at the same level.

Theoretical framework and hypotheses development

The present study attempts to extend Patten and Crampton (2004) by exploring Goffman's theory of self-presentation within the context of the legitimacy framework. This is then applied to the relation between the content/presentation of website environmental disclosure and environmental performance.

Legitimacy and Goffman's theory of self-presentation

In general, legitimacy theory suggests that social disclosure is a direct function of social and/or political pressure faced by organizations (i.e., firms under higher pressure will provide a larger amount of social disclosures). More specifically, proponents of the theory (e.g., Lindholm, 1994; Patten, 1991, 1992, 2002a; Hackston and Milne, 1996) argue that the demand for legitimacy systematically drives the extent of social and environmental disclosures. Dowling and Pfeffer (1975) state "organizations are legitimate to the extent that their activities are congruent with the goals of the superordinate system" (p. 123). As such, one of the strategies organizations can undertake to gain, repair or maintain legitimacy is to use communication to project an image of social legitimacy (Dowling and Pfeffer, 1975, p. 127). Communication thus plays a pivotal role in the legitimation process and this association potentially explains why legitimacy theory has been widely tested, espoused and validated in the social and environmental accounting and disclosure literature (see, e.g., Deegan and Gordon, 1996; Hackston and Milne, 1996; Neu et al., 1998; O'Donovan, 1999; 2002; Patten, 1991; 1992; 1995; 2002a; Deegan, 2002; Deegan et al., 2002; Milne and Patten, 2002). Overall, Gray et al. (1995) argue that the organizational legitimacy framework has been viewed as one of the "most penetrating analyses" of corporate social disclosure (p. 52).

The concept of legitimacy was, however, originally rooted in sociology and social theory literature (see, e.g., Weber, 1966; Dowling and Pfeffer, 1975)⁶. As such, I draw upon sociologist Erving Goffman’s theory of self-presentation to make analogies with some features of the organizational legitimacy framework. Brown (1997) suggests that individuals and organizations “possess identities that are preserved through individual and social processes of self-esteem regulation” (p. 643). Therefore, although Goffman (1959) studied the presentation of self primarily at the individual level, his concepts and framework can also be effectively applied to increase our understanding of group and organizational behavior. In fact, Young and Massey (1978) call for analyses at the “macro-analytic levels” (p. 84) and a “dramaturgical direction” (p. 84) of Goffman’s work on the presentation of self. In his book *The Presentation of Self in Everyday Life*, Goffman (1959) employs the metaphor of theatrical performance as a framework. Consistent with this notion, I analogize Goffman’s “individual” to the organization itself, and the “others” to stakeholders and the relevant publics (see Neu et al., 1998). Each person in everyday social interaction presents himself and his activity to others, attempts to influence and control the impressions they form of him, and uses certain techniques in order to sustain his performance, just as an actor presents a character to an audience. First, he introduces the notion related to the perception of others on an individual, as follows:

When an individual enters the presence of others, they commonly seek to acquire information about him or to bring into play information about him already

⁶ For example, Weber (1966) argues that not only are most forms of power in dire need for legitimacy, but entire political and social systems look for a legitimation process to prevent crises and degeneration. Dowling and Pfeffer (1975) suggest that when a disparity, actual or potential, arises between the values of the society and perception of the values of the company, there is a threat to the legitimacy of the company, labeled as the “legitimacy gap”.

possessed. They will be interested in his general socio-economic status, his conception of self, his attitude toward them, his competence, his trustworthiness, etc (...). Information about the individual helps to define the situation, enabling others to know in advance what he will expect of them and what they may expect of him. Informed in these ways, the others will know how best to act in order to call forth a desired response from him (Goffman, 1959, p. 1).

He then takes a view from the individual standpoint, as stated below:

Let us now turn from the others to the point of view of the individual who presents himself before them. He may wish them to think highly of him, or to think that he thinks highly of them, or to perceive how in fact he feels toward them, or to obtain no clear-cut impression (...). Regardless of the particular objective which the individual has in mind and of his motive for having this objective, it will be in his interests to control the conduct of the others, especially their responsive treatment of him. This control is achieved largely by (...) expressing himself in such a way as to give them the kind of impression that will lead them to act voluntarily in accordance with his own plan (Goffman, 1959, p. 3-4).

Lastly, he makes a clear distinction between two modes of expression of an individual:

The expressiveness of the individual (and therefore his capacity to give impressions) appears to involve two radically different kinds of sign activity: the expression that he gives, and the expression that he gives off. The first involves verbal symbols or their substitutes which he uses admittedly and solely to convey the information that he and the others are known to attach to these symbols. This is communication in the traditional and narrow sense. The second involves a wide range of action that others can treat as symptomatic of the actor, the expectation being that the action was performed for reasons other than the information conveyed in this way (...). The individual does of course intentionally convey misinformation by means of both of these types of communication, the first involving deceit, the second feigning (Goffman, 1959, p. 2).

The above quotes can thus be interpreted and applied to the individual-organization and others-society analogies as follows.

Stakeholders and relevant publics are intrinsically concerned about the organization's performance and activities because of their societal expectations and the social contract (see Shocker and Sethi, 1973; Matthews, 1993; Deegan and Rankin, 1996; Deegan, 2002 for more detailed discussion on social contract). Such expectations are

complemented by a desire to acquire pertinent information about the organization because it helps to define the situation, enabling the stakeholders and relevant publics to know in advance what the organization will expect of them and what they may expect of the organization. Because the organization's goal is to project a positive image and enhance its reputation, it will undertake certain legitimate-looking activities, but also *communicate* those activities to its stakeholders and the general public in order to meet those societal expectations and satisfy the public's demands. It will be in the organization's interests to control the responsive treatment and conduct of the stakeholders and relevant publics.

An organization can achieve control by expressing itself in such a way as to give the kind of impression that will lead its stakeholders and relevant publics to act voluntarily in accordance with the organization's own plans. There are two non-exclusive attributes to this communication. First, there is the expression "given." That is, for example, the use of actual verbal narratives and words (i.e., content) solely to *convey* information (communication in the traditional and narrow sense). The second attribute is the expression "given off" and this includes, for example, the use of non-verbal cues and symbols (i.e., physical presentation) to *present* information. Drawing from Goffman's work, Young and Massey (1978) suggest that 1) high disparity among organizations drives the need to recognize that "presentations will not be based on parity" (p. 85) and 2) it is in the best interest of profit-oriented organizations to utilize "theatre, social science, and *sophisticated communication strategies*" (p. 85, emphasis added) to attract public attention, thus producing a perception of legitimate-looking activities. Therefore, it appears that similar traits to organizational legitimacy are inferred from Goffman's pillar

concepts of the self-presentation theory. Based on the overlapping nature of legitimacy and self-presentation theories, I proceed to the development of hypotheses accordingly.

Development of hypotheses

Prior research (see, e.g., Deegan and Gordon, 1996; Hackston and Milne, 1996; Patten, 1992; 2002a) shows that firm size and industry classification both affect the public pressure potentially faced by companies with environmental concerns. These factors can also be significantly related to the extent of environmental disclosure in annual reports or on the Internet. The TRI program of 1986 requires U.S. firms' manufacturing facilities to file annual reports on toxic releases of more than 600 chemicals. The EPA is required to make this information available to the general public⁷. Companies with higher levels of toxic releases may thus be subject to greater public pressure than their better performing counterparts. For example, Wolf (1996) documents that environmental groups have relied on TRI data to generate "reports publicizing the names of the top polluting facilities, industries, chemicals, and states in an effort to invite public and regulatory pressure for toxic substance reductions" (p. 286). Konar and Cohen (1997) note that private parties may use TRI data to bring lawsuits against firms, "green consumers" may boycott companies with high pollution records, and government agencies may use the data for enforcement purposes (e.g., increased penalties and/or cost of new pollution equipment).

Legitimacy theory arguments suggest that exposure to public and regulatory scrutiny inherently drives companies to polish their overall image. The present study refines the measurement of website disclosure content and presentation, and focuses on

⁷ These disclosures include a list of the amount of toxics released but at a facility-level. The PERI compiles this data and aggregates them at a firm-level.

one social responsibility area, the environment. As such, I compare measurement scores for four size-matched sample groups of companies from environmentally sensitive industries (ESI) versus non-environmentally sensitive industries (non-ESI), and from worse environmental performing firms versus better environmental performing firms.

Accordingly, my first set of hypotheses relates to information *content* of environmental disclosure. Information content is defined as the extent of the underlying themes or topics that are textually present in the environmental disclosures. In line with the legitimacy framework, I predict higher levels of website environmental disclosure content for worse performing firms (i.e., top-ranked with the highest levels of toxic releases) than for better performing firms within both environmentally sensitive and non-environmentally sensitive industries. In contrast, because worse environmental performing firms are already subject to much negative exposure merely due to being listed as such, I believe that these firms will have incentives to provide high levels of environmental disclosure content-wise regardless of their industry membership.

Therefore, I state my hypotheses as follows:

H_{1a}: Ceteris paribus, for firms from environmentally sensitive industries, the extent of website environmental disclosure content will be higher for worse environmental performers than for better environmental performers.

H_{1b}: Ceteris paribus, for firms from non- environmentally sensitive industries, the extent of website environmental disclosure content will be higher for worse environmental performers than for better environmental performers.

H_{1c}: Ceteris paribus, for worse environmental performers, the extent of website environmental disclosure content will not differ across the environmental sensitivity of firm industries.

My second set of hypotheses centers on the *presentation* of website environmental disclosure. Goffman's (1959) theory on the presentation of self is relevant

to this research. The analogy (based on discussion in Section 3.1) can be drawn between (1) the individual's attempt to mislead others by "feigning" and "expressing himself in such a way as to give them the kind of impression that will lead them to act voluntarily in accordance with his own plan" (Goffman, 1959, p. 2-4); and (2) the efforts of a firm with poor environmental performance to manage stakeholders' impressions by a strategic presentation of environmental information on a savvy website.

Isenmann and Lenz (2000) identify presentation style as a relevant domain of the online environmental report design. The information *presentation* is defined as the extent to which technological, multimedia and interactive functions are used for the enhanced disclosure of environmental information to add dimension to the plain text narratives. Negative environmental performance can thus be offset by presentation on a savvy website because the latter would constitute an image-building and legitimating process strategically undertaken by corporations. Therefore, in line with Goffman's (1959) theory of self-presentation, I expect worse environmental performers to exhibit more heightened expressiveness to the presentation of their website environmental disclosures than their better counterparts. However, similar to H₁, as worse performing firms are inherently already subject to negative publicity, they also have high incentives to present their environmental disclosures with many technological, multimedia and interactive features, regardless of industry membership⁸. I formally state these hypotheses as follows:

⁸ The expectations stated in both H_{1c} and H_{2c} are in contrast with Cho and Patten (2006). This is presumably due to the *nature* of the dependent variable measure of environmental disclosure (10-K monetary environmental disclosure versus content and presentation of website environmental disclosure) but also the exposure of the Toxic 100 as opposed to the KLD ratings. Being listed in the Toxic 100 is more visible, which induces all firms to disclose more information on savvy websites regardless of industry membership. In contrast, KLD ratings are less visible, thus monetary disclosure levels may vary across industry type.

H_{2a}: *Ceteris paribus, for firms from environmentally sensitive industries, the extent of website environmental disclosure presentation will be higher for worse environmental performers than for better environmental performers.*

H_{2b}: *Ceteris paribus, for firms from non- environmentally sensitive industries, the extent of website environmental disclosure presentation will be higher for worse environmental performers than for better environmental performers.*

H_{2c}: *Ceteris paribus, for worse environmental performers, the extent of website environmental disclosure presentation will not differ across the environmental sensitivity of firm industries.*

Research methods

Sample selection

In order to be included in this study, sample firms had to:

1. Be part of the list of firms analyzed by the PERI, which includes Toxic 100 firms and non-Toxic 100 firms⁹.
2. Have an accessible corporate website that contains environmental information¹⁰.
3. Have financial data available on Compustat.
4. Meet the matching selection criterion below.

I used a dichotomous yes/no coding system to identify firms that operate in ESI from firms that do not. ESI firms are labeled as companies with a primary SIC code of 10xx/14xx (mining), 13xx (oil extraction), 26xx (paper), 28xx (chemical, except pharmaceutical, code 283x), 29xx (petroleum), and 33xx (metals).

⁹ The PERI provided me with a list of all the firms for which they compiled and aggregated TRI data and computed toxic score at the firm level. There were 338 companies in the original list. The top 100 in terms of toxic score from this list constitutes America's Toxic 100.

¹⁰ Websites were accessed during November 2006. Some sample firms had been merged or acquired and had a newly directed website. Whenever possible, I used a web tool, Waybackmachine (<http://archive.org>) to retrieve the most recent website version of the sample company for the analysis. In addition, companies with *both* a zero content and presentation score were labeled as "no environmental information available" and were excluded from the sample because of the inability to analyze them for the purpose of this study.

Similar to Cho and Patten (2006), I eliminated size effects by constructing four groups of 19 companies¹¹ matched on 2005 revenue levels. Group one includes non-ESI, better performing companies; group two includes worse performing companies operating in non-ESI; group three includes better performing firms operating in ESI; group four consists of ESI, worse performing firms. Sample firms ranged in size (based on 2005 revenue levels) from \$1,249.6 million to \$21,894 million, with a mean (median) of \$7,651.3 million (\$6,329.7 million). T-tests on the differences in mean size across groups showed no statistically significant differences. Table 5 below provides summary data on the sample firms.

Table 5: Descriptive statistics

<i>n</i> (sample size)	76
<i>Firm size</i> (2005 revenues)	
Mean	\$7,651 million
Median	6,330 million
Standard deviation	4,794 million
<i>Environmental disclosure content analysis score</i> (max = 21)	
Mean	4.14
Standard deviation	2.40
<i>Environmental disclosure presentation analysis score</i> (max = 20)	
Mean	4.58
Standard deviation	2.73

Description of the dependent variables

Since the hypotheses require the test of both the content and the presentation of corporate website environmental disclosure, I developed a comprehensive, two-section criteria disclosure evaluation metric to evaluate the 76 corporate websites in the sample.

¹¹ A total of 19 firms per matched group met all sample criteria, to constitute the final sample of 76 firms.

I based the set of criteria on prior research in both environmental and financial reporting on corporate Internet websites. Patten and Crampton (2004) used a 21-item scoring scheme of corporate webpage and annual report environmental disclosures to examine the thematic content and areas of different environmental issues. I use this particular scoring index as a basis for the development of the criteria in terms of the “content” analysis section of the website environmental disclosure. The presentation part of this study’s comprehensive 20-item metric was established according to the indexes built by both Jones et al. (1999) and Marston and Polei (2004) but tailored for information related specifically to the environment¹². Jones et al. (1999) identified several items forming a framework of guidelines that specifically aim at assessing an environmental reporting website, while Marston and Polei (2004) proposed some complementary items related to the presentation of corporate website financial information¹³, focusing on *how* such information is displayed on corporate websites and “which technological options were used to make the home page user friendly” (Marston and Polei, 2004).

The comprehensive metric thus consists of two sections (i.e., content and presentation) and 41 items in total. There are 21 items in the content section (all items were drawn from Patten and Crampton, 2004) and 20 items in the presentation section (only applicable and relevant items were selected from Jones et al., 1999 and Martson and Polei, 2004). All of the items can be measured on a dichotomous yes/no basis, quantified as 1 and 0, respectively. The metric generates separate scores to evaluate the

¹² It must be noted that although some metric items for this section may inherently relate to the entire website, the focus remains on the presentation of *environmental disclosure and information* on the website, rather than an overall assessment.

¹³ Although this study examined the overall website financial reporting practices by German companies, the distinct presentation section of the 53-item scoring checklist provided useful and complementary items that broaden the codification scheme of website presentation in general.

content and presentation of corporate website environmental disclosure, respectively. Thus, content scores could range from zero¹⁴ to 21 and presentation scores could vary from zero to 20. Actual website environmental disclosure content scores ranged from zero (one company) to 10 (3 companies), with a mean score of 4.14, while actual presentation scores ranged from zero (3 companies) to 11 (2 companies), with a mean score of 4.58. The overall comprehensive evaluation metric, along with the sources for each item, is reproduced in Appendix E. In addition, a list of omitted items from Jones et al. (1999) and Martson and Polei (2004) is also shown in Appendix E.

Environmental performance

The Political Economy Research Institute (PERI) at the University of Massachusetts Amherst identified the top 100 corporate polluters in the United States (called America's Toxic 100). In essence, the PERI's rankings constitute a measure of environmental performance as they are based on each company's toxic score. The toxic score takes into account the toxicity and the population exposure of the toxic emissions. As such, the PERI calculates the toxic score by taking the number of pounds of air releases reported in the EPA's Toxics Release Inventory, and weighs it by toxicity of chemicals and number of people impacted. Weights can be found in the EPA's Risk-Screening Environmental Indicators (RSEI) project. Toxic 100 firms consisted of the top 100 companies with the highest toxic score, as provided by the PERI, and were also dichotomously categorized with a yes/no coding scheme. I assign a score of 1 if the

¹⁴ There was one instance where while no content information was provided, one or more presentation feature(s) only was (were) available. Conversely, there were a few instances where no presentation feature from the evaluation metric was available, with only content information.

company belongs to the Toxic 100 (worse performing firms), zero otherwise (better performing firms).

Statistical analysis and results

Multivariate analysis of covariance (MANCOVA) was conducted to determine the effect of Toxic 100 membership on both website environmental disclosure content and presentation *simultaneously* while controlling for firm industry (ESI versus non-ESI). MANCOVA results revealed significant differences between Toxic 100 and non-Toxic 100 firms and the combined dependent variables, Wilks' $\lambda = .583$, $F(2, 72)$, $p < .001$, multivariate $\eta^2 = .417$. However, the covariate (industry) did not significantly influence the combined dependent variable, Wilks' $\lambda = .951$, $F(2, 72)$, $p = .161$, multivariate $\eta^2 = .049$. Analysis of covariance (ANCOVA) was conducted on each dependent variable as a follow-up test to MANCOVA. Differences between Toxic 100 and non-Toxic 100 firms were significant for both disclosure content, ($F(1, 73) = 17.142$, $p < .001$, partial $\eta^2 = .190$) and presentation ($F(1, 73) = 47.995$, $p < .001$, partial $\eta^2 = .397$). A comparison of adjusted means reveals that content and presentation score of Toxic 100 firms differs by more than 2 and 3 points, respectively, from non-Toxic 100 firms. Table 6 presents adjusted means for website environmental disclosure content and presentation scores by Toxic 100 membership.

Table 6: Adjusted means for corporate environmental disclosure content and presentation scores by Toxic 100 membership

	Adjusted mean
Website disclosure presentation score	
Toxic 100 firms	5.184
Non-Toxic 100 firms	3.105
Website disclosure content score	
Toxic 100 firms	6.263
Non-Toxic 100 firms	2.895

Further t-tests of means were conducted to examine individually the statistical significance of the relations stated in each hypothesis. Table 7 presents the results of the analyses performed to test the first set of hypotheses related to website environmental disclosure *content* scores. H_{1a} focuses on differences across ESI firms and predicts higher content scores for Toxic 100 firms than their non-Toxic 100 counterparts. As panel A of Table 3 indicates, the mean disclosure content score for Toxic 100 firms is 5.11 versus a mean score of 3.47 for the non-Toxic 100 firms. The difference is significant ($p < .05$, one tailed) and thus supports H_{1a} . Results of the analysis of website disclosure content score differences across non-ESI firms (H_{1b}) are presented in panel B of Table 3. As shown in the table, the mean disclosure content score for Toxic 100 firms is 5.26 while the mean score for non-Toxic 100 is 2.74, and the difference is significant at $p < .001$, one tailed. In contrast, H_{1c} predicts no difference in website disclosure content across firm industry for the Toxic 100 firms. Results presented in panel C of Table 3 support this hypothesis. The mean content score for ESI Toxic 100 firms is only slightly lower (5.11) than the mean score for non-ESI Toxic 100 firms (5.26). The difference is not statistically significant.

The results for tests of differences in the *presentation* of website environmental disclosure (the second set of hypotheses) are shown in Table 8. H_{2a} relates to ESI firms and predicts higher presentation scores for Toxic 100 than non-Toxic 100 companies. As highlighted in panel A of Table 4, the mean disclosure presentation score for Toxic 100 firms is 6.68 compared to a mean score of 3.42 for their non-Toxic 100 counterparts. The difference is highly significant ($p = .000$, one-tailed) and thus H_{2a} is supported. H_{2b} hypothesizes the same relation but for non-ESI firms. Test results are exhibited in panel B of Table 4 and indicate that the mean disclosure presentation score for Toxic 100 firms of 5.84 is significantly higher than the mean score for non-Toxic 100 (2.37) at $p = .000$, one tailed. Finally, H_{2c} centers on the website disclosure presentation score for Toxic 100 firms. Similar to H_{1c}, no difference in presentation score is expected across firm industry. Mean presentation score for Toxic 100 firms operating in ESI is 6.68 while the score for non-ESI firms is 5.84. The difference is not statistically significant and H_{2c} is supported.

Table 7: Results of t-tests of mean website environmental disclosure content disclosure scores

Panel A				
ESI firms				
	Mean score	Standard. deviation	<i>t</i> -statistic	Statistical significance*
Toxic 100 firms	5.11	2.307		
Non-Toxic 100 firms	3.47	2.270	2.198	<.05
Panel B				
Non-ESI firms				
	Mean score	Standard. deviation	<i>t</i> -statistic	Statistical significance*
Toxic 100 firms	5.26	2.513		
Non-Toxic 100 firms	2.74	1.538	3.724	.000
Panel C				
Toxic 100 firms				
	Mean score	Standard. deviation	<i>t</i> -statistic	Statistical significance*
ESI firms	5.11	2.51		
Non-ESI firms	5.26	2.31	0.202	.425
* Significance levels are one-tailed				

Table 8: Results of t-tests of mean website environmental disclosure presentation disclosure scores

Panel A				
ESI firms				
	Mean score	Standard. deviation	<i>t</i> -statistic	Statistical significance*
Toxic 100 firms	6.68	1.916		
Non-Toxic 100 firms	3.42	1.710	5.538	.000
Panel B				
Non-ESI firms				
	Mean score	Standard. deviation	<i>t</i> -statistic	Statistical significance*
Toxic 100 firms	5.84	2.968		
Non-Toxic 100 firms	2.37	1.674	4.444	.000
Panel C				
Toxic 100 firms				
	Mean score	Standard. deviation	<i>t</i> -statistic	Statistical significance*
ESI firms	6.68	1.92		
Non-ESI firms	5.84	2.97	1.039	.153
* Significance levels are one-tailed.				

Discussion, limitation, and future research

The purpose of this study was to extend the legitimacy on the Internet arguments of Patten and Crampton (2004) by examining the content and presentation of corporate website environmental disclosure in relation to firm environmental performance. The results of the statistical analyses indicate that, on average, both the content and presentation scores of corporate website environmental disclosure were higher for worse environmental performing firms than their better counterparts. In addition, these results were shown to hold when I separately tested the disclosure content and presentation, respectively, in relation to environmental performance. However, the environmental sensitivity of firm industry did not have a significant effect on website environmental disclosure content and presentation.

Overall, these findings are consistent with the Internet legitimacy presumptions and extend the results reported by Patten and Crampton (2004). That is, poorer environmental performing firms (as defined by Toxic 100 firms) provided more extensive environmental disclosures in terms of content and presented their disclosures on savvier websites. This supports the argument of corporate website environmental disclosures being more concerned with *legitimizing* corporations with negative environmental performance rather than increasing firm's environmental accountability. Internet and web technologies provide corporate public relations departments some extraordinary opportunities. While SustainAbility/UNEP highlights the potential added-value of website disclosure in its 1999 *Internet Reporting Report*, it also remains cautious about the availability of the Internet medium to disseminate environmental information, as it states, "unfortunately, there is a great temptation to put a public relations spin on

information, whether published in a printed [environmental report] or on the website.” (1999, p. 18). This especially can be pertinent to firms under the spotlight such as those ranked and labeled as America’s Toxic 100. Being included on the list presumably lends to negative exposure and therefore, the “successful” management of communications and self-presentation is crucial. As Esrock and Leichty (1998) suggest, “organizations tend to communicate image building in a low key manner that may soften perceptions the organization is engaged in corporate citizenship activities only for self-serving reasons” (p. 317).

This paper is subject to a number of limitations. Restrictions related to sample criteria limited the scope of this study to a relatively small sample size, and the analysis focused on US firms only. The extent to which the results are generalizable, therefore, cannot be established. Furthermore, I examined website disclosures at a single point in time. Future research may address some of these limitations by, for example, extending the scope of this study to a wider sample of international firms across countries. Moreover, given the dynamic nature of the Internet, longitudinal analyses of corporate websites could give a more comprehensive view of the online environmental reporting motivations and practices of corporations. Finally, studies from a website/Internet user perspective (i.e., examining the perception of the user about environmental information presented in corporate websites) could also be a possible avenue for future research.

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**STUDY THREE:
LEGITIMATION STRATEGIES USED IN RESPONSE TO ENVIRONMENTAL
DISASTER: A FRENCH CASE STUDY OF TOTAL S.A.'S ERIKA AND AZF
INCIDENTS**

Introduction

Legitimacy theory, commensurable with other socio-political theories such as political economy, institutional, stakeholder and resource dependence theories (see Gray et al., 1995; Chen and Roberts, 2005), is essentially regarded as being systems-oriented. That is, given that organizations are part of a broader social system, business entities are viewed as components of the larger social environment within which they exist (Gray et al., 1995). Social and environmental accounting (SEA) research has been heavily grounded in this paradigm (see Burrell and Morgan, 1979) and legitimacy theory continues to be extensively referenced, developed and tested throughout a vast number of SEA empirical studies (see, e.g., Wiseman, 1982; Patten, 1991, 1992, 2002, 2005; Deegan and Rankin, 1996; Neu et al., 1998; Deegan et al., 2000, 2002; Patten and Crampton, 2004) to explain corporate decisions related to social and environmental disclosures.¹⁵ However, only a handful of researchers (see, e.g., Malone and Roberts, 1996; Buhr, 1998; O'Donovan, 1999; Campbell, 2000) have utilized qualitative research methodologies to obtain a more in-depth understanding of management's views related to disclosure choices in various reports.

¹⁵ In support of this argument, Deegan (2002) lays out a theoretical foundation on legitimacy theory and its effect on social and environmental disclosures in a special issue of the *Accounting, Auditing and Accountability Journal*, which was exclusively dedicated to legitimacy in SEA research. Volume 15 issue 3 of the *Accounting, Auditing and Accountability Journal* (2002) was published as a special issue on legitimacy theory and social/environmental disclosures. The issue contained five studies on social and environmental reporting and its role in maintaining or creating organizational legitimacy.

In this paper, I take a case study approach to examine the environmental disclosure decisions and practices of Total S.A. (hereafter, Total¹⁶). Total is one of the world's largest integrated oil and gas companies, and is headquartered in France (see Appendix F for a summary of Total's history and Appendix G for more detailed information). My interest in this particular organization stems from two factors. First, Total plays a pivotal role in the international oil industry as it has a presence in more than 100 countries, owns reserves of 11.1 billion barrels of oil equivalent, and operates 28 refineries as well as more than 16,000 branded gas stations, mostly in Europe and Africa. In addition, its core business engages all aspects of the petroleum industry (i.e., both upstream and downstream activities¹⁷) and also includes the production of petrochemicals (Hoovers, 2006; Mergent, 2006). Due to this exposure, Total constantly faces ethical and social issues around the globe. Moreover, operating within such an environmentally sensitive industry subjects Total to increased public pressure for both corporate social responsibility (CSR) activities and strong environmental stewardship. Second, Total has been involved in two major environmental crises that occurred in France less than two years apart. These were the 20,000-ton *Erika* oil spill (hereafter, *Erika*) on the coast line of Bretagne on December 9, 1999 and the deadly AZF (French initials for "Azote de France," i.e., nitrogen fertilizer) chemical plant explosion (hereafter, AZF) in Toulouse, France on September 21, 2001. Both events have been highly and negatively publicized

¹⁶ In 1999, "Total" (short name for "Total Compagnie Française de Pétroles") acquired two petroleum companies, "PetroFina" and "Elf Aquitaine". As a result, the company changed its own name officially to "Total Fina Elf" (TFE) in 2000 to simplify it again to "Total S.A." in 2003. In this paper, "TotalFinaElf" and "Total S.A.", even when quoted as such from sources, will be replaced by "Total" for practical purposes. See detailed company history and information in Appendices A and B.

¹⁷ Such activities include (1) exploring, developing and producing crude oil and natural gas (upstream); (2) refining and marketing its products (downstream); and (3) trading, transporting and shipping crude and finished products.

by the French and international media, considerably damaging Total's image and reputation.

The purpose of this case study is to shed light on the legitimation strategies employed by Total to defend and downplay its environmental performance and activities related to the *Erika* and AZF Toulouse incidents. Similar to Buhr (1998), I use a triangulation of data sources (see Patton, 1987; Yin, 1994) by drawing upon a combination of historiography, content analysis and semi-structured interview approaches to construct the case. The aggregate findings of the analysis support the legitimacy argument. They indicate that Total made attempts to manage societal perceptions and legitimate itself via environmental disclosures disseminated in its annual reports, CSR reports, and on its corporate website. This study provides additional evidence that corporations use environmental disclosure as a tool for responding to corporate crises (see Marcus and Goodman, 1991; Patten, 1992) or to social pressure driven by negative media coverage (Brown and Deegan, 1999; O'Donovan, 1999).

The remainder of the study proceeds as follows. Situating the paper within the legitimacy framework, a discussion about the notion of "social contract" is followed by a description of different corporate legitimation strategies of communication. Next, qualitative research methodologies and approaches to be used are elaborated. The subsequent section offers a background of the two crises and section five provides an in-depth chronological analysis of Total's environmental disclosure activities, complemented with quotes from semi-structured interviews. The paper concludes with a discussion of the implications and limitations of the study.

Theoretical framework

Social contract

The notion of “social contract” is far from new. Its earliest conception can be attributed to Plato’s *The Republic* and subsequently traced to the works of Thomas Hobbes (1588-1679), John Locke (1632-1704), and Jean-Jacques Rousseau (1712-1778)¹⁸ (see Deegan 2002; Khor, 2003). More recent versions of social contract theory demonstrate that individual and social group rights and liberties are founded on mutually advantageous agreements which are made between members of society (Rawls, 1999).

As Shocker and Sethi (1973) suggest:

Any social institution – and business is no exception – operates in society via a social contract, expressed or implied, whereby its survival and growth are based on:

- (1) the delivery of some socially desirable ends to society in general, and
- (2) the distribution of economic, social, or political benefits to groups from which it derives its power.

In a dynamic society, neither the sources of institutional power nor the needs for its services are permanent. Therefore, an institution must constantly meet the twin tests of legitimacy and relevance by demonstrating that society requires its services and that the groups benefiting from its rewards have society’s approval (p. 97).

¹⁸ “The earliest elements of the notion of the existence of a ‘social contract’ can be traced to Plato’s *The Republic*. However, the first definitive statements on Social Contract Theory only emerged in the 17th century through Thomas Hobbes’ *Leviathan*. Thomas Hobbes (1588-1679), living in an era of turbulent economic, political and religious upheaval, surmised that enlightened self-interest (...) central power (...) was the individual’s only way out of anarchy and misery. Command, consent and duty emerged as the essential ingredients of Hobbes’ definition of social contracts. Philosophers such as John Locke (1632-1704) and Jean-Jacques Rousseau (1712-1778) later expanded on Hobbes’ work and developed it towards different directions. John Locke postulates that the shape of nature and the social environment is an apolitical, yet moral society where social actors are compelled to conform to divinely ordered natural law (...). On the other hand, Jean-Jacques Rousseau proposes that the state of nature is not a state of conflict, but a situation of individual freedom where creativity thrives. Since a fully mature individual is a social person, a social contract is established to regulate social interaction (...)” (Khor, 2003).

Society provides corporations with a legitimate status, granting them the authority to consume natural resources and to hire employees. In addition, organizations draw on society's resources and, in return, produce goods and services. However, the organization has no intrinsic rights to these benefits and such benefits would be expected to exceed the costs to society (for example, waste products) (Matthews, 1993). Thus, an organization's quest for legitimacy is primarily defined by the social contract that is established between corporations and society (i.e., the public at large), not just merely its shareholders. However, a breach of this contract, i.e., the failure to meet societal expectations, may lead to a revocation of the contract itself (Deegan and Rankin, 1996). The organization then risks having sanctions forced upon it by society. In addition, a breach could be so detrimental it jeopardizes the company's very existence (Deegan et al., 2002). Because the social contract is what justifies an organization's "raison d'être" and its survival, much effort will be made to ensure its preservation. The concept of social contract has therefore become central to legitimacy theory (see Patten, 1992; Deegan et al., 2002). Legitimacy theory argues that organizations must constantly demonstrate they are operating within the bounds of society. In other words, they attempt to ensure that their activities are perceived as legitimate by outside parties (Deegan, 2000).

Legitimacy theory

Lindholm (1994) defines legitimacy as:

...a condition or status which exists when an entity's value system is congruent with the value system of the larger social system of which the entity is a part. When a disparity, actual or potential, exists between the two value systems, there is a threat to the entity's legitimacy (p.2).

Organizations are bequeathed with "legitimacy" to the extent that their activities are congruent with the goals of the superordinate system, or societal expectations (Parsons,

1960). Deegan (2002) argues that organizations will continue to exist only if society confers legitimacy upon them. Therefore, legitimacy is viewed as a resource on which organizations depend for survival (Dowling and Pfeffer, 1975). However, because of its dynamic nature (Lindholm, 1994), this resource can be affected or manipulated by organizations (Woodward et al., 2001). According to legitimacy theory, when the supply of a particular resource is deemed essential to organizational survival, managers will engage in legitimation strategies to ensure the continuation of the resource supply (Deegan, 2002). One means to honor the “social contract” and overcome the threats to preserve legitimacy is to undertake legitimation strategies of communication (Dowling and Pfeffer, 1975) such as the production and diffusion of environmental disclosures.

Legitimation strategies of communication

Organizations use accounting and disclosure to signal their rationality and to meet the expectations of society (see Burchell et al., 1985; Richardson, 1987). Deegan (2002) further suggests that such disclosures are the most effective way to change the perceptions of external parties. Because organizational legitimacy revolves around the idea of societal perceptions and values, there is a direct relation between the likelihood of adverse shifts in the public perception of an organization’s social responsibility and the appeal of the organization to manage these shifts in perception (O’Donovan, 2002).

Corporations seem to focus more on gaining and repairing legitimacy than on maintaining it (Ashforth and Gibbs, 1990). In fact, most of the legitimacy management literature in SEA examines firms seeking to *repair* their legitimacy subsequent to highly mediatized negative environmental events or corporate crises such as oil spills or deadly accidents (see, e.g., Patten, 1992; Deegan and Rankin, 1996; Walden and Schwartz,

1997). Accordingly, when firms determine that their reputation has been potentially diminished by legitimacy-threatening environmental accidents (i.e., their activities are no longer aligned with the clauses of the social contract), they will seek to manage the legitimation process through publicized remedial strategies (Cormier and Gordon, 2001) such as, for example, annual report environmental disclosures (Deegan, 2002).

Prior research shows that information disclosed in corporate annual reports has been used by management to send specific messages to the public in an attempt to convince readers to accept management's view of society, and to correct misconceptions that the public may have formed about a company's environmental performance (Salancik and Meindl, 1984; Amernic, 1992). In short, annual reports can be thought of as painting an overly positive self-portrait of the company. Additionally, two other forms of media have been used by corporations to transmit environmental information. First, many companies now issue a CSR or public interest report (see Malone and Roberts, 1996) that typically provides more detailed information on the company's social and environmental activities than the financially-oriented annual report. Second, numerous firms have begun reporting environmental information on their websites (see, e.g., Jones et al., 1998, 1999; SustainAbility/UNEP, 1999; Isenmann and Lenz, 2000; Patten and Crampton, 2004). Because the CSR report and corporate website disclosures are more voluntary in nature, their mere existence suggests they might be a form of legitimation strategy.

Dowling and Pfeffer (1975), Lindholm (1994) and O'Donovan (2002) propose some (overlapping) communication tactics for legitimacy-seeking organizations. These include, for example, altering the definition of social values, conforming to the values of

the relevant publics, deflecting attention from the issue of concern, or staying away from entering a debate about environmental or social matters. Organizations may implement these strategies individually or in combination through the use of public disclosure of information in media such as annual reports, CSR reports, or corporate websites. For example, a firm may draw attention to positive news (e.g., environmental awards won or implementation of safety or diversity initiatives) or offset negative news or poor performance (environmental disaster or high pollution rate) via positive or mitigating environmental disclosures (see, e.g., Patten, 1991, 1992, 2002; Walden and Schwartz, 1997). Therefore, environmental disclosures may essentially be viewed as a strategic tactic that firms use in their quest for legitimacy. As feared by Gray and Bebbington (2000), therefore, such disclosures appear to be a “legitimation device and not an accountability mechanism” (p. 16).

In this paper, I first develop and present a typology of organizational legitimation strategies. Then, I classify Total’s disclosures in these categories in order to conduct my analysis. Strategies developed in the typology are primarily based on Dowling and Pfeffer (1975), Lindholm (1994) and O’Donovan (2002) and summarized below. See Figures 2 and 3 for a depiction and a typology of these strategies, respectively.

(AD) Avoidance/Deflection

The company may attempt to appear legitimate by:

- remaining silent about general social and environmental matters (AD1)
- remaining silent about specific events related to the environment (AD2)
- redirecting or deflecting attention from specific environmental concern issues to other related (or non-related) matters (AD3)

(DS) Disclaimer

The company may attempt to appear legitimate by issuing disclaimer statements, denying its responsibilities about negative or harmful events, matters or incidents.

(IE) Image Enhancement

The company may attempt to appear legitimate by linking itself to positive social values disclosing self-praising information about its commitments and accomplishments in regards to:

-social and environmental matters in general (IE1)

-about specific events related to the environment (IE2)

The typology presents a sample of prior studies from various disciplines, illustrating each legitimating strategy type. I expect to observe a combination and distribution of different strategies (into which Total's disclosures would be classified) that will be driven primarily by the events occurring during the examined time period.

Research methodologies

The objective of a case study¹⁹ is to “obtain an *interpretation* of what happens more directly, and to be able to gain insights into all the relevant aspects of the phenomenon under study” (Hägg and Hedlund, 1979, emphasis added, p. 139). The present analysis investigates the “how” and “why” of a phenomenon based on contemporary events within their real-life contexts, that is Total's environmental disclosure activities revolving around the *Erika* in 1999 and AZF Toulouse in 2001.

Threats to validity and reliability issues in case study research are generally addressed

¹⁹ First, “a case study is an empirical inquiry that investigates a contemporary phenomenon *within its real-life context*, especially when the boundaries between phenomenon and context are not clearly evident” (emphasis added). Second, “the case study inquiry copes with the technically distinctive situation in which there will be many more variables of interest than data points”, “relies on multiple sources of evidence, with data needing to converge in a triangulation fashion”, and “benefits from the prior development of theoretical propositions to guide data collection and analysis”. Finally, “the case study is not either a data collection tactic or merely a design feature alone but a comprehensive research strategy” (Yin, 1994).

with a process of triangulation of multiple sources of evidence based on converging lines of inquiry (Patton, 1987; Yin, 1994; McKinnon, 1998). This process allows the researcher to address a broader range of historical, attitudinal, and behavioral issues (Yin, 1994) and improve the clarity of research findings (Lewis and Ritchie, 2003). In line with these research methodology guidelines, four types of evidence sources – documentation, archival records, interviews and physical artifacts – were used to provide corroborating evidence and help enrich this case study. In addition and consistent with Buhr (1998), three approaches were applied to offer “a different perspective along the internal/external source and historical/retrospective viewpoint continua” (Buhr, 1998, p. 166). The combination of (1) historiography,²⁰ which provides an external-historical perspective, (2) content analysis, which provides an internal-historical perspective, and (3) semi-structured interviews, which provide both internal-retrospective and external-retrospective perspectives, gives a rich and in-depth “multi-faceted picture” of a specific case phenomenon (p. 166).

Historiography

Historiographical approaches are well aligned and consistent with the case study research method (Yin, 1994). Because my analysis revolves around environmental disasters that occurred in 1999 and 2001, this historiographical section of the study focuses primarily on a timeframe slightly prior and subsequent to those events. Therefore,

²⁰ Historiography is referred to as the study of the way history is and has been written. In a broad sense, history refers to the methodology and practices of writing history. In a more specific sense, it can refer to writing *about* rather than *of* history. As a meta-level analysis of descriptions of the past, this latter conception can relate to the former in that the analysis usually focuses on the narrative, interpretations, worldview, use of evidence, or method of presentation of other historians. The study of historiography demands a critical approach that goes beyond the mere examination of historical fact. Historiographical studies consider the source, often by researching the author, his or her position in society, and the type of history being written.

Total's history, background, activities and performance from 1996 to 2004 were thoroughly examined with the objective of situating the company in the appropriate sociological and historical context (see Buhr, 1998). Feedback from interviewees contributed to the gathering of broad perspectives on the general background of the company. Specific information and data were primarily obtained from documentation and archival records such as public records, press releases, Internet sources, library electronic databases, and articles from newspapers, business journals, magazines and trade publications. Over 80 items were reviewed in the aggregate.

Content analysis

Content analysis is a “research technique for making replicable and valid inferences from data according to their context” (Krippendorff, 1980, p. 21). In particular, the content analysis methodology places and codifies the text of a narrative into different categories based on selected criteria (Weber, 1990). The chosen unit of analysis for the objective means of content analysis (i.e., counting concrete references) is the sentence because it provides “complete, reliable, and meaningful data for further analysis” (Milne and Adler, 1999, p. 243).

Two types of documentation and one physical artifact internally produced by the company were content-analyzed.²¹ First, corporate annual reports for Total for the period 1996-2004 were obtained. Second, I gathered CSR reports for the years 2002 to 2004.²² Third, the content and the form for Total's official corporate website, including the company's self-produced press releases were examined.

²¹ Total provides both French and English versions that are available for most documents. For consistency and practical purposes (translation issues), English version documents were analyzed.

²² Total did not issue their first CSR report until 2002.

Semi-structured interviews

The interview is one of the most essential sources of case study information (Yin, 1994). Semi-structured (see Gilchrist, 1992; McCracken, 1988) or focused (see Merton et al., 1990) interviews are beneficial because they provide a balance of perspectives by (1) allowing to corroborate certain facts that have already been established through more detailed, explicit feedback from respondents, and (2) asking respondents their own opinions about events, or sometimes their own insights. In the latter case, respondents are called “informants” (Yin, 1994). Insights obtained from these interviews can provide shortcuts to the situation’s prior history and help identify other relevant sources of evidence.

Semi-structured interviews were conducted in France throughout the summer of 2006 with a broad range of stakeholders. These informants included some of Total’s current personnel at its headquarters office; former employees of the company; experts, consultants and analysts of socially responsible investments firms and not-for-profit organizations focused on CSR; an attorney; a local constituent; an environmental group and an association of victims.

The interviews ranged in length from thirty to ninety minutes and were guided by a set of pre-designed questions focusing on the specific subjects of the Erika and AZF incidents, Total’s response to those incidents, Total’s policies and motivations about corporate social responsibility, and some feedback about the general atmosphere in France at the times of the incidents. Buhr (1998) reminds us that “we, as individuals, continually interpret and reinterpret our past in order to construct and reconstruct our present” (p. 169). Consequently, there is a possibility that informants’ responses may have been influenced by various factors related to their personal background or

experience²³, relationship or employment history with Total in certain cases. In addition, efforts were made so that information was elicited without leading respondents to allow them to freely tell their story and provide their own opinions. Interview questions and general information about informants are exhibited in Appendices H and I, respectively.

Background on Erika and AZF Toulouse

Background - Erika

On December 12, 1999, Total's tanker, the *Erika*, broke in two off the coast of Bretagne, France, while carrying 30,000 tons of heavy fuel oil. Of that, some 19,800 tons were spilled, polluting approximately 400 kilometers of the Bretagne coastline and creating permanent, large-scale ecological and environmental damage in the area (International Oil Pollution Compensation Funds, 2006). For example, between 150,000 and 300,000 birds were killed (encompassing over sixty species, six of them representing 90% of all losses) and 200,000 tons of sand were removed to recover the spilled oil. The economic impact related to the *Erika*'s shipwreck was estimated at between 840 and 960 million euros (Novethic, 2001).²⁴ During the clean-up process from June to September 2000, over 250,000 tons of oily waste were collected from the shoreline (International Oil Pollution Compensation Funds, 2006). On November 7, 2001, Total was placed under

²³ For example, some informants had strong ties (e.g., childhood, family, heritage, etc...) with certain geographic regions that were severely affected by one or both incidents, whereas others did not and exhibited a lower extent of emotions.

²⁴ Created in 2001, Novethic is a resource center about corporate social responsibility (CSR) and socially responsible investment (SRI). Novethic primarily focuses on investors, corporate agents, stakeholders and academic researchers. Numerous articles, studies, guidelines, tools, databases and daily news related to CSR and SRI are available on their website at <http://www.novethic.fr>, which attracts more than 80,000 visitors each month.

judicial investigation, charged \$6.8 million,²⁵ and banned from transporting oil in ships more than 15 years old²⁶ (The Oil Daily, 2001a).

Subsequent to the shipwreck, Total attempted to utilize sophisticated judicial remedies to minimize its responsibility and accountability for the severe financial, social and environmental impacts caused by this incident. One of the attorneys who represent the victim towns located in the Loire Atlantique region confirmed:

With money, it's easy, you can pay 15 lawyers to work for you for an entire year, something that the towns are *not* able to do...it is clear that it helps (...). In any case, they hired some excellent lawyers, I personally know them well, they hired some exceptional attorneys (Informant 14, July 2006).²⁷

It appears that the company ignored the efforts made by French environmental groups such as “Les Amis de la Terre” to help victims obtain damage compensation. Further, using a variety of juridical recourses, Total was also successful in postponing the case trial and final judgment for several years. For instance, in June 2004, Total’s legal

²⁵ In a press release dated October 16, 2001, Total makes publicly available their charges under consideration, which are (1) complicity in endangering others “(...) for being an accomplice in the obviously deliberate violation of the rules of safety and prudence required by laws and regulations (...) thereby exposing others to a particularly serious risk of which it was necessarily aware” and (2) pollution by a ship “(...) for failing to take necessary measures on December 11 and 12, 1999 to avoid the accident at sea that to the pollution. In its capacity as charterer, the company had de facto power of supervision and oversight in the ship’s management and operation”.

²⁶ The *Erika* was a 26 year-old single-hull tanker at the time of the incident. Subsequently, the Condition Assessment Scheme (CAS) was adopted was adopted in 2001 and is applicable to certain oil tankers under the Marine Pollution convention (referred as to the “MARPOL convention”). Its requirements stipulate more stringent and transparent verification of the reported structural condition of the ship and that documentary and survey procedures have been properly carried out and completed. Proposals to amend MARPOL 73/78, which were submitted by all the fifteen Member States of the European Union, called for further acceleration of the phase-out timetable for single-hull tankers, an immediate ban on the carriage of heavy grades of oil in single-hull tankers and for the CAS to be applied to tankers of 15 years of age and above. These proposals were adopted in December 2003 (International Maritime Organization, 2006). However, the 15-year old ban referred here applied to Total in 2001 as Ms. Dominique de Talancé, senior examining magistrate of the Paris District Court (Tribunal de Grande Instance) imposed judicial supervision measures prohibiting from chartering vessels more than 15 years old transport No. 2 fuel oil.

²⁷ Interview references are cited as “(Informant number, date)” and details are listed separately in Appendix D.

defense team requested a new expert report regarding the condition of the *Erika* back in 1999, further delaying the case (Les Amis de la Terre, 2005)²⁸. Some 60 civil parties (i.e., groups of victims) voiced their anger about this long wait for compensation, while Total has been reporting record financial profits since the incident (La Tribune, 2005). One of those civil parties is the Loire Atlantique region and its coastlines have suffered the most from the *Erika*'s black tide, as described below:

Well, we represent the towns in the Loire Atlantique, and some in Vendee, knowing that the Loire Atlantique region has been the most affected since out of the 180,000 tons of oil mixed with sand collected in the littoral, there were 120,000 in Loire Atlantique, so it is really the Loire Atlantique region that has been the most affected (Informant 14, July 2006).

This region is represented as a civil party by its commissioner Roselyne Bachelot-Narquin. She expressed her frustration and determination in an interview published on Novethic's (2001) website.²⁹ When asked whether stigmatizing only Total was merely an easy solution, she replied:

Are you kidding me? The report from expert Clouet indicates that BP refused to charter the *Erika* just before Total decided to do so. The more we move forward in the investigation, the more Total's responsibility seems to be clear. After all, the company was not obligated to use a bad tanker!

In a semi-structured interview with a former employee of Total who worked in the department in charge of chartering vessels (and had left before the *Erika* incident), the argument of the company using a "bad tanker" was also brought up:

I wondered how it was possible that they had obtained the approval to charter a *garbage* vessel –this is how I saw it, that it was a *garbage* vessel – that had been chartered because it was heavy fuel, (...), a worthless non-noble product, (...),

²⁸ After more than seven years, the trial for these parties is finally underway since February 2007. The expected time for a verdict is unknown.

²⁹ The Novethic website is originally designed in French. Excerpts of website quotes included in the paper were translated into English.

and because of that, they did not want to pay so they took a trash vessel, but anyways, how was it possible? (...) To this date, I still have not understood how we can give an approval on a vessel – it is a strong word when I said ‘garbage vessel’, but even me, I was ready to consider it not normal to have used a ship in such a bad shape and with so little attractiveness at the international level (Informant 1, June 2006).

Background – AZF Toulouse

Less than two years after the *Erika* event, on September 21, 2001, a major accident occurred at the AZF³⁰ chemical production plant on the outskirts of Toulouse, France’s fourth largest city.³¹ A huge explosion ripped through the section of the factory in which 200 to 300 tons of ammonium nitrate were stored, killing 31 people and wounding nearly 2,500. Among the numerous damages, the blast blew out windows downtown up to 3 kilometers from the center of the explosion and created a 50-meter diameter, 10-meter deep crater (United Nations Environment Program, 2006). Some 20,000 homes, apartments and offices were damaged, in addition to 3 hospitals, 60 schools, a university campus for 25,000 students and a soccer stadium that all became unusable (The New York Times, 2001). One of the active leaders of the main victims’ association³² in Toulouse recalled some descriptive scenes and how shocking and frustrating it was to be left alone, with little or no help:

³⁰ AZF is the brand name of France’s largest fertilizer manufacturer and is owned by Grande Paroisse, which is part of Atofina, Total’s chemical division.

³¹ Located in the southwest region of France with a population of over 800,000, Toulouse has grown rapidly over the last thirty years to become Europe’s Space and Aviation capital, France’s first university campus after Paris, and on the country’s leading research centers (Midi-Pyrénées Expansion, 2006; United Nations Environment Program, 2006).

³² The association is called “Plus jamais ça ni ici ni ailleurs” and was formed in Toulouse by victims, victims’ families and friends and volunteers. It remains proactive to date in terms of seeking answers and compensation, helping the community, and in the legal proceedings against Total. The name can be translated as “Never this again here or elsewhere”.

Well, the first hours, it's a complete shock to stand in front of completely devastated houses and landscape. It's...inside, outside, we can't circulate, even by foot, well possibly by foot, but we cannot take the bike, we cannot take the car, there are wounded people everywhere, it is a picture of war! Well we did not live during wars, but I told myself this is war...I see some kids covered with blood who get out of high schools. The first day, this is it, it is the dismay, it is the need to help each other between neighbors to clean, to find the one who has a portable gas range because we don't have power nor gas anymore... And then very quickly, the next day, Saturday, Sunday, what is dismaying, it's that we are almost *without help!* We still have firemen in our area, we have some civil security and then otherwise, we have State security police, the army... We have a feeling of surveillance, which was somewhat necessary to avoid looting or mugging. But to manage our daily life, find water, find food, there is no more public transportation. There were 150 buses that exploded, there is no bakery, no butcher's, there is nothing, all the elderly people have no means of getting around! While we are waiting, on the practical side, we are alone! (Informant 11, July 2006)

Similar to the reaction to the *Erika* shipwreck, Total utilized some powerful legal strategies, as this informant from GreenPeace explained:

They completely clogged the access to local attorneys, for example. So associations solicited attorneys to seek representation and all of them answered them: "Well, listen, we are sorry but we are already retained by Total so this is impossible for us." They locked everything up. (Informant 8, June 2006).

In addition, the company immediately sought to distance itself from responsibility for the AZF Toulouse chemical plant explosion. According to corroborating evidence, the industrial accident hypothesis (i.e., the incident was caused by the mishandling of products) was the most probable cause of the blast (The New York Times, 2001; La Dépêche du Midi, 2003). This conclusion would be extremely detrimental for the company, since its safety procedures would be called into question, presumably leading to full accountability for all damages. As a result, Total attempted to link the incident to a deliberate criminal act, that is the terrorist attacks of September 11, 2001 in the U.S., as

the two incidents occurred only ten days apart³³ (The New York Times, 2001; The Oil Daily, 2001b). Interestingly, these speculations were only communicated via interviews with the media but not disclosed in any corporate press releases or other official documents.

Analysis

To obtain a logical understanding of Total's environmental performance and disclosure activities and its surrounding circumstances and events, I performed a simple chronological time-series-based analysis (see Yin, 1994). For each of the time frames, I categorized the data extracted from quotes in annual reports, CSR reports, interviews, internally generated press releases³⁴ and Total's Internet corporate website into the strategies of communication developed in the typology. The result is a comprehensive picture of Total's legitimation process.

The relevant timeline can be broken down into three separate periods: (1) 1996-1998 was a "pre-incident" stage during which Total had no major environmental crises, and served to establish a baseline for the analysis; (2) the 1999-2000 time frame represents the *Erika* oil spill and its subsequent year. Due to its late occurrence during 1999 (i.e., December), it was deemed beneficial to investigate Total's response to the crisis during the year 2000, as the aftermath public pressure continued to develop in France and throughout Europe;³⁵ (3) the 2001-2002 period corresponds to the AZF

³³ During the semi-structured interviews, several informants evoked the fact that at that time, the terrorist attacks hypothesis was primarily suggested by either Total or the media.

³⁴ All corporate press releases generated by Total were obtained and are available in the archives section on the company's official website at <http://www.total.com>.

³⁵ A keyword search in the Lexis-Nexis database for news media headlines and articles for 2002 in Europe returned over 50 items related to Total and the *Erika* shipwreck. In addition, an Internet search on the topic

Toulouse chemical plant explosion and its subsequent year. This particular period became interesting as at that time, Total was already under high scrutiny caused by the *Erika* shipwreck. The plant explosion generated even more public pressure for the company. Because the incident also occurred relatively late in 2001 (i.e., September), the year 2002 is also investigated. The chronological analysis is preceded by a quantitative examination of annual report environmental disclosures and press releases for the overall period.

Quantitative analysis

The first stage of my analysis centered on identifying changes in the volume of annual report environmental disclosures over the period leading up to and including Total's crises (years 1996 through 2002). Consistent with Patten (2002) and Cho et al. (2006), an eight-item content analysis scheme was used to identify the extent of Total's environmental disclosure. Content analysis (see, e.g., Wiseman, 1982) involves reviewing the financial report for the presence or absence of statements related to environmental issues. The specific areas examined for in this study are identified in Appendix J. It must be specified that the scores were determined based on the *number of instances* rather than the dichotomous yes/no system (except for items 5 to 8, which are related to financial statement items) in order to capture a proxy for the quantity of the environmental disclosure measure. Thus, in contrast to Patten (2002) and Cho et al. (2006), scores were *not* restricted from zero to eight, but unlimited. Disclosure levels were measured for both the entire annual report and the Chairman's message only. In addition, the number of press releases related to either incident was longitudinally

resulted in finding numerous websites, banners and slogans bashing the company in relation to the *Erika* incident.

analyzed. Press releases could be found in the archives section of Total's Internet website. Figures 4 and 5 summarize these analyses and provide evidence of Total's legitimation process.

Consistent with prior empirical findings (see, e.g., Patten, 1992; Deegan and Rankin, 1996; Walden and Schwartz, 1997), the large increase in the extent of Total's annual report environmental disclosure in 1999, followed by a slight decrease in 2000 and another increase in 2001 (i.e., the years of the sudden increases correspond to the years during which the crises occurred, respectively) indicate the company's legitimation process and desire to repair its legitimacy. More importantly, the level of environmental disclosure in 2001 remained higher than in 1999, which suggests that the two quasi-consecutive negative environmental incidents triggered an incremental increase in the amount of environmental disclosures provided. On a smaller scale, disclosures made in the annual report Chairman's messages from 1999 to 2002 revealed a steady, upward trend and appeared to be marked by a slight delay in the legitimation process. The increase was more pronounced in 2000 than in 1999, while the 2001 and 2002 statements were fairly consistent. The examination of the number of press releases issued by Total from 1999 to 2002 also revealed legitimation features. Of the fifteen press releases identified as "related to either incident", five were on the Erika oil spill and ten on the AZF plant explosion. The press releases concerning *Erika* were dated December 30, 1999, January 14, 2000, October 16, 2001, November 7, 2001, and December 12, 2002. In contrast, those regarding AZF were heavily concentrated during the months of September, October and November 2001. On September 21, 2001 (i.e., the date of the explosion), two press releases were issued by Total, followed by one on September 22

and September 25. Figure 5 illustrates the significant increase in the number of Total's press releases. This observation led to the conjecture that multiple events do bring additional incremental pressures, which companies attempt to mitigate using various legitimation strategies.

Additionally, I analyzed the quantitative *distribution* of strategy types used in annual report environmental disclosures³⁶ for the period 1999-2002. Overall, results show that (1) the distribution of the strategy types used in annual report environmental disclosures was comparable for 1999 and 2000, (2) the 2001 distribution indicates a higher proportion of strategy IE2 relative to the other years, and (3) in contrast to the 1999-2000 period, the distributions for 2001 and 2002 include strategies AD and DS. Table 9 below shows the proportion/distribution figures by strategy types.

³⁶ The distribution of the strategies for each year was determined only for annual report environmental disclosures to be consistent with the fiscal years and not mixed with the press release dates.

Table 9: Distribution of strategy types used in Total’s annual report environmental disclosures for the period 1999-2002

Strategy	1999		2000		2001		2002	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
Image Enhancement (IE) 1	21	87.5%	13	86.7%	24	70.6%	27	81.8%
Image Enhancement (IE) 2	3	12.5%	2	13.3%	9	26.5%	4	12.1%
Avoidance/Deflection (AD) 2 and 3	0	0.0%	0	0.0%	0	0.0%	1	3.05%
Disclaimer (DS)	0	0.0%	0	0.0%	1	2.9%	1	3.05%
Total	24	100%	15	100%	34	100%	33	100%

1996-1998: the baseline period

There was no indication of major environmental concern involving Total during the 1996-1998 period. As such, this three-year time frame appears to represent the company in its “normal” course of business, and is used to establish a baseline level of disclosure for the analysis of subsequent periods.

Review of the 1996 to 1998 annual report Chairman’s messages³⁷ indicated no discussions about environmental concerns. The primary focus of the company seemed to be on growth, profits, and maximizing shareholders’ wealth, as illustrated by the following statement in bold and large font:

Our strategy for the coming years calls for continued growth and improved profitability to create value for shareholders (AR 1996, p. 2).

³⁷ The 1996 annual report contained the Chairman’s “letter” while the 1997 and 1998 annual reports formatted such messages in the form of “questions to the Chairman” and/or “Chairman’s foreword”. From 1999 on, Total continually labeled this message “Chairman’s message”. For simplicity and consistency reasons, the latter term (i.e., “Chairman’s message”) is used throughout this study, as they all signify the same type of message.

Some level of pride to be part of a great lucrative, profitable French corporation was also expressed by a current middle management employee who had been with the group for a long time:

Total: they [the company critics] need to know that they are the French champions! Still, Total, 4th or 5th petroleum group in the world! I am not sure if they realize what it represents from a strategic perspective...Knowing that energy always has a strategic connotation (...), if there was no longer Total, they have to deal with the major Anglo-Saxons, which play and lead the politics they deem useful...Let's say that in France, we are fortunate to have an energy champion of the size of a major, so there are responsibilities as well, but it is still also a guaranty, I would say, to have energy everyday (Informant 13, July 2006).

Nonetheless, it must be noted that the 1996-1998 annual reports included a minimal amount of social and environmental disclosure. It was aimed primarily at enhancing Total's image and emphasizing future environmental commitments rather than past accomplishments. For example:

Following modest capital expenditures in some of its facilities, Total's refineries will be equipped to provide the high performance and environmentally friendly products required under future standards planned for 2000 (AR 1997, p. 19).

Moreover, although Total's corporate website during this baseline period³⁸ offered a hyperlink to "Environment Topics", the linked section's disclosures were very limited.

Included was, first, a general statement on the environment (strategy IE1):

Protecting the environment and ensuring safety on the work site have always been a high priority for Total's operational teams in carrying out their everyday activities, in whatever field they may operate (Total website, old version).

³⁸ An Internet tool called "WAYBACKMACHINE" (found at <http://web.archive.org>) allows the retrieval of archived websites by dates (as early as 1997) and helps determine when a given site was changed and redesigned. According to WAYBACKMACHINE, Total's website did not incur any major changes from April 6, 1997 to March 4, 2000. On April 8, 2000, the site appeared to have been significantly revamped. When cited from the pre-April 2000 version of the website, I will use "(Total website, old version)".

Also included in the linked section was discussion of what Total claimed were examples of environmentally sound practices regarding its operation in Bolivia and Indonesia. For example, the website noted:

Based on the previous environmental impact studies undertaken by Total, the first official Environmental Impact Assessment (EIA) was carried out in 1988 in compliance with the Indonesian government regulations, and covered all of the Total Indonesia activities in the Mahakam Delta (Total website, old version).

1999-2000: post-Erika

Comments from various perspectives (including those from Total's sustainable development management) about Total's communication strategies during the very first few days subsequent to the *Erika* incident almost universally support complete failure.

For example, a former employee recalled:

Nonetheless, one thing I found very interesting was the reaction of Total's CEO, who was explaining that he was a *victim* of this incident, while in reality the question revolves around the company's perimeter! He merely outsourced this activity to another party and he suddenly discovers himself as a victim! I thought that the rhetoric here was a little strong there. He presented himself like a victim because it was an independent company, I think, to whom they had outsourced the transportation, the chartering, and so Total was explaining via its CEO that Total was a first-row victim because they had lost their shipment! (Informant 6, June 2006).

Similarly, when asked how Total's communication in general was perceived at the time of the incident, a financial analyst specialized in socially responsible investments answered:

Completely failed, because they did not manage the crisis at that moment and then they did not make any commitments as they should have (...) and given the emerging anger from inhabitants of the French littoral, commitments beyond assurance had to be made. Moreover, back then oil price started to climb up and they should have said things like "we are going to put our hands deeply in the pocket, 200, 300, 400, 500 million euros." Anyhow, a strong financial commitment was necessary (...). They had a juridical, technical attitude by saying "in which area(s) are we in fault, where are the breaches of the contract, who is responsible, who is going to pay, are we covered by insurance?"... They

did their homework from this point of view and told themselves “if we are attacked on this, it’s OK, we will go to court” and immediately, it’s the *defensive* attitude. *This* is what does not go well at all, the defensive attitude! (Informant 9, June 2006).

The perception of catastrophic post-*Erika* communication was even best underlined and surprisingly reinforced by Total’s sustainable development department itself. A member of the management team admitted:

It is actually a totally failed communication during the first week. As I mentioned, strictly articulated on the group’s legal position, not expressing any compassion whatsoever regarding consequences. It was purely juridical, which is rarely a way to lead external communications in the event of a crisis (Informant 10, June 2006).

The team member added that the company’s actions were poorly received by the public “because we got into this crisis followed up by a huge communication mistake, which is now cited in management textbooks as what *not* to do” (Informant 10, June 2006). Thus, Total’s reputation capital was severely impacted. A discussion with an expert in corporate social responsibility about the group’s image prompted these observations:

Yes, it [Total’s image] has been affected. Actually it was measured back then in a very objective, accurate manner by some corporate image and reputation barometers. I recall a weekly business journal called ‘The New Economist’ that used to publish an index for French companies’ image, and it had clearly noticed the fall, the collapse of Total’s image subsequent to *Erika* (Informant 3, June 2006).

According to the attorney informant, Total had no choice but do something:

Such a company cannot afford to be convicted, in terms of image – it is disastrous...It is not in terms of money; it is in terms of image (Informant 14, July 2006).

In response to this negative effect of the *Erika* incident, Total attempted to regain legitimacy through disclosures made in corporate press releases. On December 30, 1999, the company issued its first press release about the oil spill and highlighted its

commitments and accomplishments, representing an effort to enhance its image in regards to how it planned to handle the issue (strategy IE2):

Total will directly finance the pumping of the fuel contained in the *Erika* wreckage. This will enable the compensation budget (...) to be dedicated first to indemnifying people who have suffered economic damage and to reimbursing costs incurred in cleaning up sea and land pollution... Total will set up a 40 million francs (6.1 million euros) emergency fund to assist cleaning up the shore... Cleaning up will be done with full respect to the environment. *Particular attention will be paid to the work performed in the islands, because of their delicate eco-systems... Total notes that since the accident took place, the Group has promptly answered all requests for specialists, equipment and products from authorities in the affected regions (...) and will also put into place programs for restoring ecological balance* (PR December 30, 1999).

In its January 14, 2000 press release, about one month after the *Erika* accident, Total attempted to deflect attention from critical issues such as clean-up process updates and accountability by vaguely discussing the weaknesses of certain procedures (strategy AD3).

The *Erika* accident illustrates the limitations of the current inspection system's operating procedures. In this connection, we share the concern of the French government, to which we had already expressed our commitment to playing an active role in efforts to rapidly help improve maritime safety. We believe that, over the medium term, improving maritime safety will require implementing international measures within the framework of the International Maritime Organization, possibly under the impetus of the European Union (PR January 14, 2000).

These examples of corporate press releases illustrate Totals' timely efforts towards legitimation. This type of disclosure has the advantage to be specific and controllable in terms of timing of their release. On another front, Total's 1999 annual report, which was published during the second fiscal quarter of 2000,³⁹ also appeared to include some legitimacy disclosures. In the Chairman's message, CEO Thierry

³⁹ I contacted Total's Investor Relations office in New York and confirmed this information. The original French version of the annual report is published around the first or second fiscal subsequent quarters in Paris. It is then translated into English (in-house) and the reports are sent to New York generally in June.

Desmarest remained silent about general social and environmental issues (strategy AD1).

During the interview with a member of Total's sustainable development management team, the following reason was invoked:

Silence, where the question is raised for us, is in the treatment of controversies. When you have a big controversy launched by an international NGO, which, I don't know, plays up business background, their ability to raise funds from a certain number of contributors by bringing up a new cause... Given the notoriety of NGOs, given the capital of liking which they have at their disposal – higher than the controversy itself, it is not necessarily easy to say something or be properly listened to without being immediately misquoted, poorly repeated, and we rather have a tendency to be careful of not feed controversies. Sometimes NGOs wait for us on this because it works even better if we react (Informant 10, June 2006).

CEO Desmarest, however, made a distanced and depersonalized reference to the oil spill, never explicitly mentioning the name “*Erika*,” while still attempting to enhance the company's image (strategy IE2):

In December 1999, *an oil tanker* chartered by Total sank off the Bretagne coast, serving as a reminder of the risks involved in all stages of the petroleum chain. In view of the far-reaching consequences of the accident, Total created the Atlantic Coast Task Force with fifty full-time staff and four main objectives: coastal clean-up operations; treatment and disposal of waste; recovery of the oil cargo remaining in the wreck; and assistance with restoring the ecological balance of the affected areas. Beyond that, Total has taken action to tighten the selection criteria for chartering tankers and has decided to take an active part in improving the safety of maritime transport (AR 1999, p. 6, emphasis added).

For the purpose of the present analysis, this narrative was classified as an image enhancement strategy in relation to the specific incident (strategy IE2). Other IE2 strategy annual report disclosures included:

In an effort to repair the damage caused by the sinking, the Group has now set up a special Atlantic Coast Task Force responsible for helping to clean up the oil pollution, treat the waste oil collected and remove all the fuel oil remaining in the wreck (AR 1999, p. 25);

and,

In order to take an active part in remedying the consequences of the sinking of the oil tanker “*Erika*” off the French Atlantic coast, Total has decided to go *beyond simple legal responsibilities* (...). In addition, the Group has decided to step up its efforts towards improving overall safety of maritime transport. Total is *in favor of the introduction of a strict new regulatory framework* (...) (AR 1999, p. 34, emphasis added).

The latter quote raised questions about Total’s declarations. In the first part, Total claims to “go beyond simple legal responsibilities” (AR 1999, p. 34). Nonetheless, the company seemed to have vastly managed such legal responsibilities, using various sophisticated means to delay trial and compensation.⁴⁰ The second part states that the company is favorable to adhering to a “strict new regulatory framework” (AR 1999, p. 34). However, when Ms. Dominique de Talancé, senior examining magistrate of the Paris District Court (Tribunal of Grande Instance), imposed new regulatory measures specific to Total, the company’s response was:

Total feels that [this measure] makes no sense [and this new rule] is at the very least discriminatory. Total will be appealing this decision in the appropriate court (PR November 7, 2001).

However, strategy IE1 (image enhancement in relation to social and environmental matters in general) was by far the most extensively used by Total in response to the *Erika* crisis. Such observation was supported by this local constituent’s remark:

And they certainly have a specific strategy within the global group to project a positive image of the company, an innovating company that brings the well-being to people on a daily basis (Informant 5, June 2006).

⁴⁰ After more than six years of judicial procedures, on February 3, 2006, magistrate Dominique de Talancé has finally notified all parties involved about Total’s trial regarding the *Erika* oil spill. The company faces charges of “pollution” and “complicity in endangering people and property. The trial was supposed to take place in Paris before the end of the year (Le Monde, 2006; Liberation, 2006a) but was delayed again. It will take place from February 12 to June 13, 2007 (Liberation, 2006b).

For example, the Corporate Values section of the report explicitly showed its “commitment” to the environment and sustainable development in an attempt to shape the image of the company by linking itself to strong legitimate social and environmental values:

For all Total teams, the safety of both personnel (...) and the protection of the surrounding environment are an integral part of their everyday activities (...). At Total, safety and the environment involve everyone throughout the hierarchy (AR 1999, p. 33);

As noted earlier, the 2000 annual report was characterized by an overall decrease in the volume of environmental disclosures in comparison to the 1999 report. Some differences also existed in the Chairman’s statement in each report. In his 2000 annual report message, Chairman Desmarest conveyed a sense of confidence and accomplishment in Total’s environmental stewardship by making statements pertaining to strategy IE1:

In keeping with its industrial responsibilities, Total is committed to efficient energy use and energy conservation, taking into account the needs of current consumers and the interests of future generations. The Group’s paramount operating priorities are safety, environmental protection and excellence in facilities. In this respect, I wanted the new Group to immediately set out formal guidelines governing actions and behavior in a Code of Conduct and a new Health, Safety, Environment and Quality Charter (AR 2000, p. 3).

In a prominent location on that same page, the following statement by the Chairman was highlighted in bold and larger font:

I wanted Total’s three businesses to incorporate the social, economic and environmental responsibilities of sustainable development into their operations and long-term goals (AR 2000, p. 3).

Interestingly, one of the few IE2 strategy disclosures included in the 2000 annual report is at best, controversial. The company claimed:

The Group has decided not to charter any vessel over 80,000 tons that is more than 20 years old, or any vessel under 80,000 tons that is more than 25 years old. Total was the *first* oil company to make this decision (AR 2000, p. 15, emphasis added).

However, as the measures imposed by Ms. de Talancé required Total to post a reserve of FF 50 million and prohibited it from chartering vessels more than 15 years old to transport No. 2 fuel oil, it appears that Total played up its initiatives to self-impose the 20-year and 25-year age limits on certain ships. In addition, the Condition Assessment Scheme (CAS) was adopted in 2001 in the wake of the incident and its proposed amendments called for a ban on 15-year tankers (see note 10 for more details).

Similar to 1999, strategy IE1 disclosures were the most frequently used in the 2000 annual report, exemplifying Total's attempt to shape its perception by associating itself with strong legitimate, environmental values:

The Group's commitment to sustainable development reflects above all a state of mind. It is an integral part of our corporate culture to strive for growth while remaining attentive to the needs of society at large and adopting a far-sighted strategy (AR 2000, p. 14);

Finally, 2000 is also the year during which (see note 18) the company's website was completely redesigned and enhanced. This version of the website is the same as the one today minus a few updates. The site provides up-to-date stock prices, press releases and general news. More importantly, it includes a highly visible "Corporate Social Responsibility" hyperlink which leads to numerous subset links such as "Challenges and Commitments", "Ethical Business Principles", "Challenges and Actions", "Tracking Our Performance", and "Special Reports". Interestingly, one of the special reports available on the website is entitled "Erika, 6 years on" and is accompanied by animations and slide presentations. It describes Total's achievements regarding the incident (strategy IE2):

On the 12th of December 1999, the Erika, an Italian-owned tanker carrying 30,884 metric tons of heavy fuel oil belonging to a Total subsidiary company, broke in two off the coast of Brittany (...). An emergency unit was immediately set up at Total to assist the authorities responsible for managing the consequences of the accident and leverage available expertise to help the parties concerned (...). Total created its Atlantic Coast task force to address the oil-spill that started moving toward the French Atlantic coast in the days and weeks that followed (...). Today, Total intends to fulfill its commitments and play its role in efforts to forestall future pollution hazards (Total website, new version).

In addition, a large quantity of other legitimating disclosures related to the environment (strategy IE1) can be found throughout the website, notably in the “Challenges and Actions” section. For example, the company includes this statement on preserving biodiversity:

Declining biodiversity and natural resources is a major global concern, and Total has been actively involved in preserving biodiversity for many years. This commitment is formally expressed through the Group Biodiversity Policy and deployed through a wide variety of local initiatives (Total website, new version).

It also states, relative to improving air quality:

Efforts to improve air quality have been successfully pursued for many years in many countries. We are continuing our work to manage and reduce emissions near our facilities, in line with E.U. directives. We also pursue research to bring more environmentally friendly products to market (Total website, new version).

In summary, the analysis of the post-*Erika* period annual reports and press releases (1999 and 2000) shows that (1) strategy IE1 disclosures were the dominating tactics of legitimation during the post-*Erika* phase; (2) the DS strategy was not used during that time frame; (3) strategy AD1 was present in the year of the incident; (4) strategy AD3 was used only on the 2000 press release; (5) some strategy IE2 disclosures are touted by factual contradictions and paradoxes which magnified Total’s legitimation strategies.

2001-2002: *post-AZF*

While Total was still dealing with the remaining effects of the Erika disaster, on September 21, 2001, the AZF Toulouse chemical plant exploded. In contrast to the reaction to the Erika oil spill, Total issued press releases on the day of the chemical plant explosion and immediately subsequent to the incident. This appears to be consistent with the following statement from the management team member of Total's sustainable development department:

There were indeed, at the time of AZF, some procedures of centralized crisis cells that were already put in place, and as AZF occurs at the end of 2001, that is two years after *Erika*, there was also an extreme sensitization in terms of communication (...). Well, we learn from lessons! (Informant 10, June 2006).

Thus, Total escalated its attempts at legitimation following AZF, illustrated by five related press releases issued within a week of the incident (two were issued on the actual day of the incident) and several more throughout 2002. The title of the releases suggests a progressive search for legitimation. For example, the first release was entitled "Accident at Grande Paroisse factory in Toulouse: an appalling tragedy" whereas the September 28 release title read "Total sets up FRF 20-million emergency fund for the victims hit hardest by Toulouse disaster." Total also made a number of self-praising statements that emphasized the company's activities, accomplishments and commitments in regards to the remedy of the AZF Toulouse explosion. Hence, strategy IE2 dominated the content of the releases:

The explosion is an appalling tragedy. It is a sight of shocking devastation, like a vision of horror. My initial thoughts go to the victims and their families, as well as to all the people of Toulouse who have been struck by this tragedy. The Group will deploy all resources possible to show its solidarity with the families of the victims and the people of Toulouse, who are affected by the catastrophe (...). An information unit for the victims' families has been set up at the Grande Paroisse head office in Paris. The telephone number at the unit is +33 (0)1 47 96 97 41. In

addition, a medical and psychological emergency unit is being set up in Toulouse to bring all possible assistance to the people concerned (PR September 21, 2001); and,

Total has set up a FRF 20-million emergency fund to assist the people most affected by the Toulouse disaster (...). The new fund is in addition to the FRF 10-million that Total contributed to local authorities the day after the Toulouse disaster to provide emergency assistance for victims (PR September 28, 2001).

Total has decided to provide financial support to Toulouse residents affected by the Grande Paroisse explosion in response to the serious problems facing them as the winter sets in (PR November 14, 2001).

However, one of the leaders and a member of the Toulouse victims' association took a more critical position regarding the above statement on Total's commitment to pay:

It [Total] realized that by paying and by communicating the fact that it pays, it went well in the public opinion so it stayed there (Informant 11, July 2006).

In terms of communication, it's that they tried to look good by saying that they will pay and at the same time by saying "you see how generous we are since we pay, even if we are not responsible!" (Informant 12, July 2006).

A number of deflection tactics (strategy AD3) were also embedded throughout the statements, directing attention to inherent generic "industrial risks" and "safety issues concerning industrial facilities" (PR September 25, 2001) and going as far as shifting the blame to the "coexistence of industrial activities and neighboring urban populations" (PR April 11, 2002). Total also deflected attention towards its commitment of support for the economic activity in Toulouse, progressively getting away from the pressing key issues of legal responsibility and compensation related to the explosion.

For this reason, Toulouse, with its high-potential university and research community and its commitment to encouraging high-technology enterprises, enjoys the necessary scientific credibility to host the European Industrial Safety Institute and a Biotechnology Park. Total would give its support to their creation and development. These actions would be a major contribution to job creation and support in the region, bolstering the economic development (...) (PR April 11, 2002).

Interestingly, it was during this period that Total also issued two press releases in response to the judicial process and decisions made by the court concerning the *Erika* disaster. The DS strategy is exemplified in the October 16, 2001 corporate press release, in which Total pleaded not guilty by making the following assertion to defend itself, as a precautionary disclaimer tactic:

Total intends to show that the Company and its employees in *no way* contributed to the charges made against them. Total believes that it fully respected maritime law concerning the ship's management, supervision and operation, and that, therefore, the charges of complicity in endangering others and pollution are *not applicable* (PR October 16, 2001, emphasis added).

Total denied its responsibility again in its press release of November 7, 2001, the day on which Ms. de Talancé imposed formal charges against the company. A slight deflection (strategy AD3) from the legal matters to their contribution to France's economy and solidarity was also apparent:

Total has cooperated fully with the judicial authorities. It is unthinkable that the Company would in any way seek to circumvent an unfavorable legal decision. Total has more than 50,000 employees in France and is a major contributor to the country's economy. There can be no doubt about solvency. Lastly, Total has already taken tangible measures that demonstrate its solidarity with victims of the oil spill (PR November 7, 2001).

Total's 2001 annual report environmental disclosures were clearly affected by the sequence of two major environmental crises. There was a significant increase in terms of the overall volume of disclosures (over 27% and 120% increases from 1999 and 2000, respectively), and a change in the strategies used in the Chairman's statement.

In contrast to the 1999 annual report Chairman's message in response to the *Erika* oil spill, the 2001 statement explicitly described in details the company's commitments to provide relief efforts to the AZF disaster (strategy IE2):

Unfortunately, 2001 was also the year in which we had to deal with our most serious industrial disaster. On September 21, an explosion at the AZF Grande Paroisse factory in Toulouse took the lives of 30 people and wounded 2,500 others (...). While the cause of the explosion remains unknown, we are committed to providing relief and assistance of this disaster (...). Total will continue to give absolute priority to human safety, respect for the environment, and the search for excellence in the running of its facilities (AR 2001, p. 2).

Other parts of the Total's 2001 and 2002 annual reports reflected strategies IE1 and IE2, the latter emphasizing some sense of immediacy:

Total aims to conduct a determined policy focusing on human resources, safety, respect for the environment and the preservation of natural resources, by setting progress-oriented objectives. Its policy of growth is implemented for the benefit of all stakeholders through active attention to sustainable development (AR 2001, p. 7);

In the face of the catastrophe, Total *immediately* deployed human, financial and technical aid (...). The Group also implemented emergency financial measures to cope with the situation. On September 21, a 1.5 million euro fund was made available to the local community for rescue work and emergency assistance to the victims. On September 28, a 3 million euro fund was created (AR 2001, p. 16, emphasis added);

and,

The company *immediately* indicated that it would act responsibly and provided support and relief to the victims. Total and its employees have shown their solidarity with those affected (AR 2001, p. 44, emphasis added).

One of the most surprising features of the 2001 annual report was the following candid defensive statement about the company's responsibility regarding the *Erika* incident (strategy DS), repeated almost verbatim in the Risk Factors section of the 2002 annual report:

Total, as a legal entity, as well as five of its employees, has become the subject of a criminal investigation by a Paris criminal court of the sinking and the resulting pollution (...) Total believes that the accusations against it and its employees are *without merit (substance) in both fact and law* (AR 2001, p. 104; AR 2002, p. 134; emphasis added).

In 2002, the extent of environmental disclosures included in the annual report remained high (33 instances). However, an examination of the Chairman's message revealed a sudden, noticeable detachment from any discussion about the explosion. Indeed, Chairman Desmarest did not mention anything about the accident and its aftermath, but rather redirected attention towards the publication of the company's first CSR report, illustrating both strategies AD2 and AD3:

This year, we also presenting our efforts at sustainable development and their results in the most specific terms possible, in the Group's first social and environmental report entitled "Sharing our energies" (AR 2002, p. 2).

Extensive discussions about "dealing with the consequences of the AZF explosion and redeveloping the site" (AR 2002, p. 20; CSR 2002, p. 92) took place in both the 2002 annual and CSR reports.

Besides the content of the inaugural 2002 CSR report, comments about the outside context in which it was published as well as the report's appearance itself are equally relevant in terms of Total's remarkable care and heightened search for legitimation. The informant from GreenPeace made the following interesting revelation:

We found ourselves in a situation where Total tried to obtain GreenPeace's opinion notably on their sustainable development report. Shortly after I came on board, we met a consultant from Total who came to present his report to find out and see our feeling, what we thought and all that. (Informant 8, June 2006).

On the "look" of the CSR report, an expert in corporate social performance ratings explicitly described it as "superb" and as follows:

I look at reports everyday, and they are the most beautiful reports that I have ever seen! (...) There are over 100 pages, very nice pictures, gorgeous designs and the same for their annual report (Informant 2, June 2006).

Finally, an overview about the evolution of Total's position on environmental and sustainable development reporting was given by a manager of socially responsible funds/investments:

Yes, about the communication of sustainable development, at the time of the Erika incident, there was no report. It was something or a blank page. They did not want to assert themselves; they did not want to be visible. In 2001, after AZF, they started asking themselves questions, being a little more challenged. Thus we saw that the 2002-2003 report started to evolve. So, like a response, a self-defense to the criticisms of the incidents, the company started being more transparent, and they have been a little more transparent by investing on the *group* social assessment while few French companies performed the *group* social assessment (Informant 7, June 2006).

In summary, the analysis of the post-AZF period annual reports and press releases (2001 and 2002) shows that (1) strategy IE1 disclosures were the dominating tactics of legitimation during the post-AZF phase; (2) the 2002 annual report Chairman's statement does exhibit strategy IE2; (3) strategy AD3 was used in the 2000 and 2001 press releases; (4) the extent of the 2002 annual report environmental disclosures remained high; (5) the repercussions of the *Erika* incident still persist, as illustrated by the presence of strategy DS disclosures in the 2001 press releases and 2001/2002 annual reports.

Discussion and conclusions

The purpose of this study was to investigate the various strategies utilized by Total to defend and legitimize its environmental performance and activities in response to the *Erika* and AZF Toulouse incidents. The latter constitute typical examples of breaches of the social contract, i.e., the failure to meet reasonable societal expectations (see Shocker and Sethi, 1973; see typology in Figure 3 for more examples of organizational legitimation strategies when breaches of contract occur). Consequently, because the social contract is what justifies an organization's "raison d'être" and its survival (see

Deegan et al., 2002), the company desperately needed to repair their threatened legitimacy to recapture “a certain image from the public” (Informant 13, July 2006), using effective tactics such as strategies of communication. Total’s external communication strategies – that is, annual report, CSR and website social and environmental disclosures, and press releases – may *not* have been the sole reason for Total’s survival and continued existence today. That is, legal efforts were made to fend off its liability. However, despite the observations noted earlier about its poor crisis management (especially for the communication during the *Erika* incident), the statement from Informant 3 that Total actually “managed it [the crisis] well” and that as evidence shows, “there have not been any economic damages” (June 2006) is, in a way, equally insightful and relevant. Thus, Total’s strategies of communication, examined through historiography, content analysis of annual and CSR reports, and fourteen semi-structured interviews, appeared to have served as powerful and successful legitimating tools to manage and mitigate public policy and socio-economic pressures resulting from two breaches of the social contract.

Secondly, results of this particular case study provide evidence that Total managed its legitimacy differently for the second incident, i.e., AZF Toulouse, and may be interpreted as a path to refine legitimacy theory. As illustrated by the post-AZF period, an incremental need for legitimation strategies appears to exist when a company faces a sequence of multiple crises. The significant increase in the quantity of post-AZF annual report environmental disclosures (see figure 4) and corporate press releases (see figure 5), the creation of “centralized crisis cells” and the “extreme sensitization in terms of communication” (Informant 10, June 2006), and the production of a first top-rated CSR

report in 2002 (Informant 2, Informant 3, Informant 7, June 2006) constitute corroborating evidence of an augmented legitimacy. Because prior event studies (see, e.g., Patten, 1992; Deegan et al., 2000) do not examine the impact of back-to-back environmental disasters on any specific company, it may have been difficult to observe this particular characteristic of legitimacy theory. The present case study can thus be viewed as an attempt to underscore the incremental augmentation of legitimation needs and strategies in the event of subsequent crises.

Finally, and of equal importance, this study brings up the broad notion of accountability. In many instances, Total's primary goal was to disassociate itself with any factors related to either incident and blame other related parties. For example, today's Total personnel still insist:

Well, Total was indeed involved in this matter [the Erika incident] by in a way that we can describe as indirect since we are neither owners nor operators, but merely charterers, so actually customers of the services rendered by the ship to transport combustible merchandise (Informant 10, June 2006).

The ship had been certified by a company that did not do their job, but Total, from a regulation point of view, had nothing to reproach to itself (Informant 13, July 2006).

An expert in the CSR arena implicitly made the following observation in regards to Total's attitude during the crises (but applicable to other large corporations operating in environmentally sensitive industries) that sums it all:

We know the risks or we don't. If we don't know them, we try to know about them, this is it, there is an impact, and at least we know the risks. If we know the risks, which precautions have we taken to avoid that [an incident] incurs? If we pass on the responsibility or hire professionals, we ensure ourselves that they are *really* professionals. Thus, [ask] « who is behind this ship, is the certification of good quality, etc...? *This* is professional work. We have between our hands a risky object, we ensure ourselves that the risk does not get real. It is not because we pass on the baby to someone else that we wash our hands – it would be too simple! (Informant 4, June 2006).

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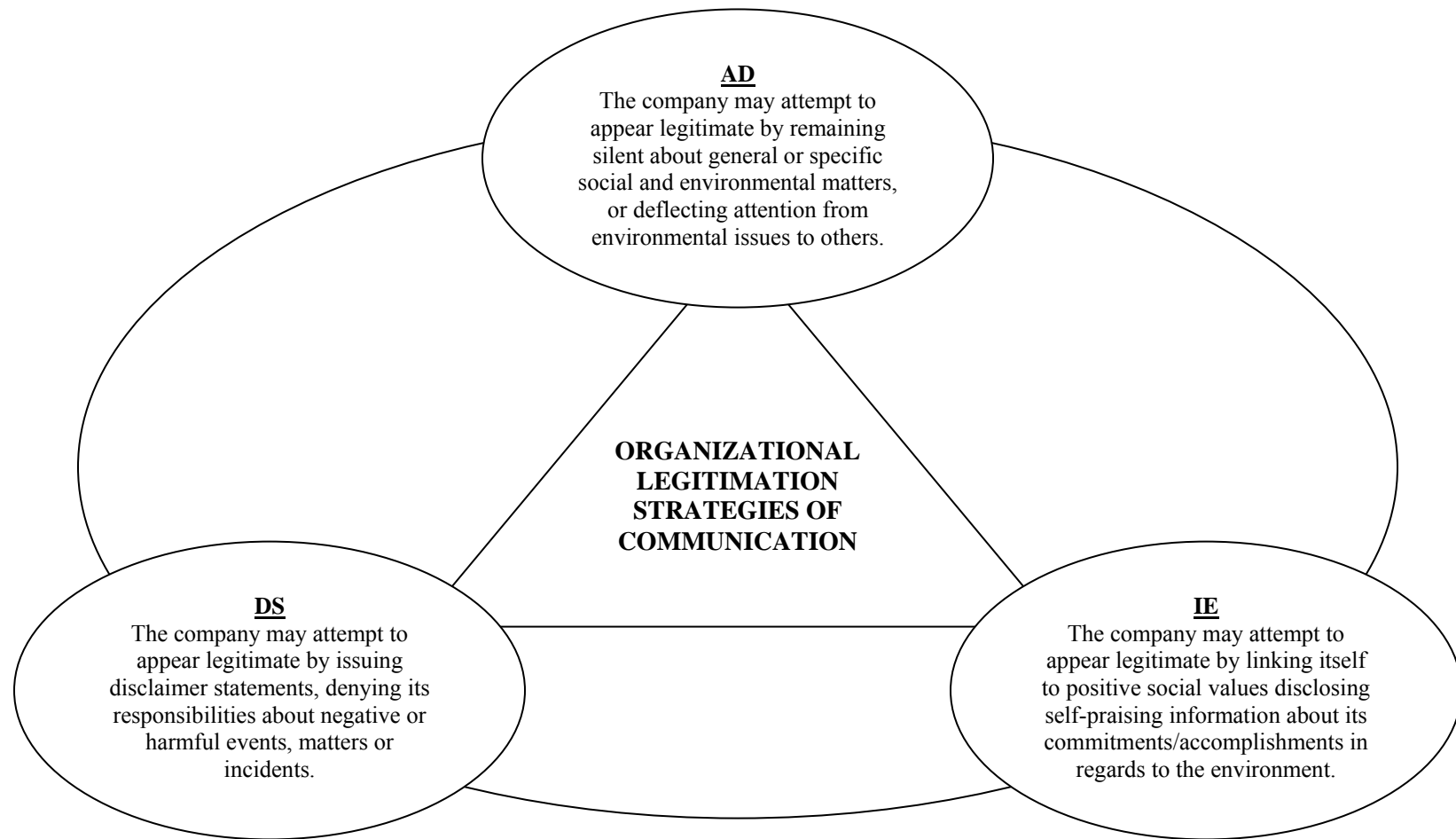


Figure 2: Organizational legitimacy strategies

Adapted from Dowling and Pfeffer (1975), Lindbolm (1994), Deegan (2002) and O'Donovan (2002)

Strategy	Prior research	Findings/Arguments	TOTAL Examples
Avoidance/Deflection	Sutton and Callahan (1987)	Managers of firms that have filed for Chapter 11 bankruptcy avoided situations in which they would have had to reveal that fact.	<p><u>From Total's press release on January 14, 2000:</u></p> <p>The Erika accident illustrates the limitations of the current inspection system's operating procedures. In this connection, we share the concern of the French government, to which we had already expressed our commitment to playing an active role in efforts to rapidly help improve maritime safety. We believe that, over the medium term, improving maritime safety will require implementing international measures within the framework of the International Maritime Organization, possibly under the impetus of the European Union.</p>
	Niskala and Pretes (1995)	Environmental disclosures were found often incomplete and unrelated to the firm's actual environmental performance.	
	O'Donovan (2002)	"Avoid" is a possible tactic to legitimacy threats; for example, not entering public debate on the affects or aftermath of an oil spill.	
	Bansal and Clelland (2004)	By expressing environmental commitment, firms were able to deflect negative criticism by signaling its care for the environment.	
Disclaimer	Starbuck et al. (1978)	In an attempt to deny fault, corporate officers launched propaganda campaigns that denied the existence of crises.	<p><u>From Total's 2001 annual report:</u></p> <p>Total, as a legal entity, as well as five of its employees, has become the subject of a criminal investigation by a Paris criminal court of the sinking and the resulting pollution (...) Total believes that the accusations against it and its employees are <i>without merit (substance) in both fact and law</i> (p. 104; emphasis added).</p>
	Schwartz (1987)	NASA members denied there was a difference between their ideal organization and the actual NASA organization.	
	Keller (1989)	Despite considerable evidence of failings, GM executives refused to acknowledge the truth about their parent company.	
	Suchman (1995)	Managers attempted to deny problems, hoping to alleviate constituents' concerns until the company could gather a compensating side payment.	
Image Enhancement	Lindbolm (1994)	A firm may try to demonstrate the appropriateness of its output, methods, and goals to the public through education and information.	<p><u>From Total's 2000 annual report:</u></p> <p>In keeping with its industrial responsibilities, Total is committed to efficient energy use and energy conservation, taking into account the needs of current consumers and the interests of future generations. The Group's paramount operating priorities are safety, environmental protection and excellence in facilities. In this respect, I wanted the new Group to immediately setout formal guidelines governing actions and behavior in a Code of Conduct and a new Health, Safety, Environment and Quality Charter (p. 3).</p>
	Ashforth and Gibbs (1990)	Rather than actually changing its ways, the organization might simply symbolically manage them to appear consistent with social norms.	
	Preston et al. (1996)	Annual reports tended to emphasize organizations' achievements, often using color photographs and representing information to send the right message.	
	O'Donovan (1999)	The inclusion of voluntary disclosures in annual reports appeared to be one way companies chose to manage legitimacy and project a positive image.	

Figure 3: Typology of organizational legitimation strategies used by Total in their communications

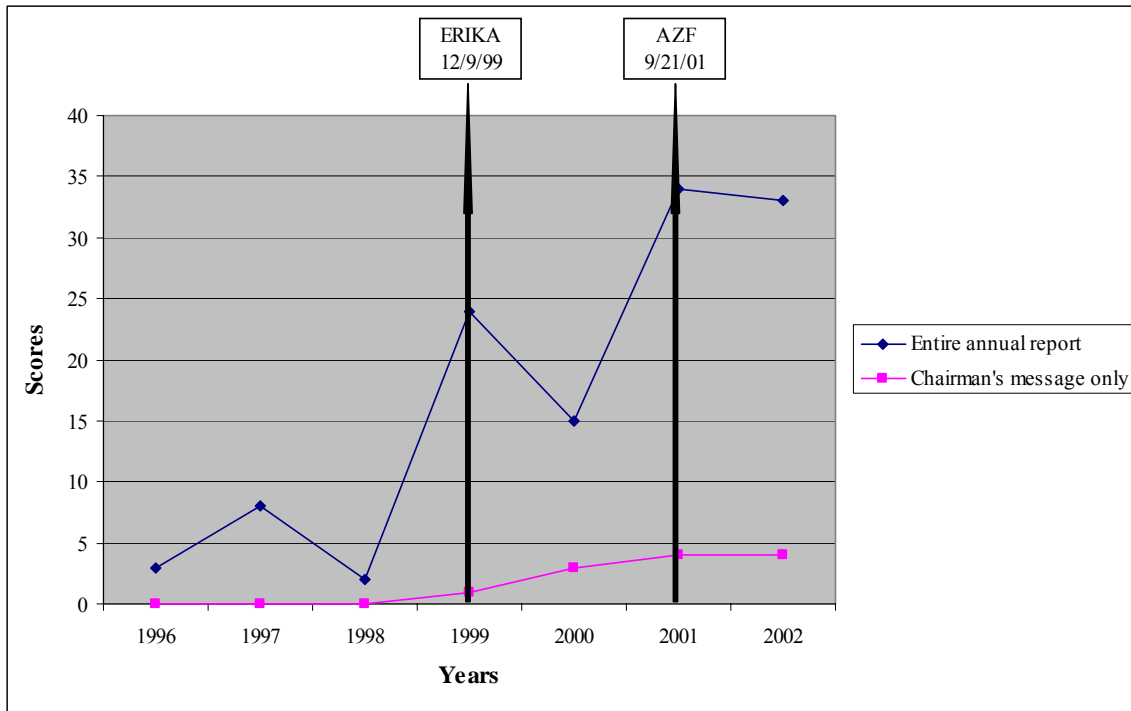


Figure 4: Total's levels of annual report environmental disclosures 1996-2002

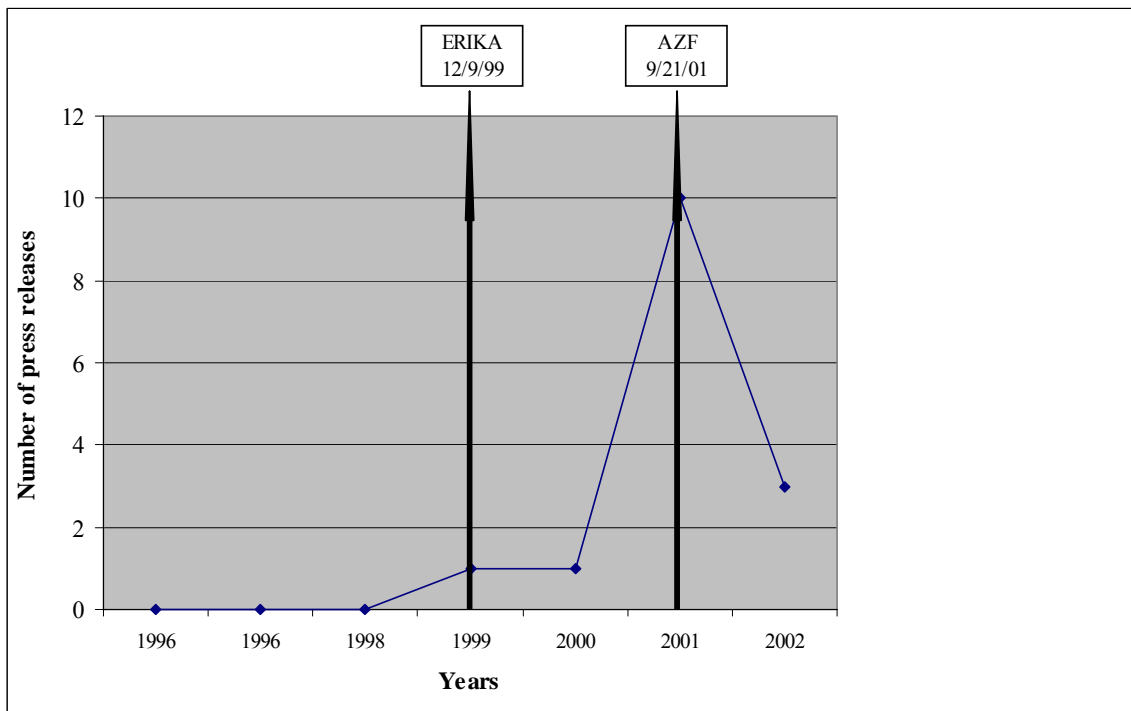


Figure 5: Total's number of corporate press releases 1996-2002

GENERAL CONCLUSION

This dissertation consisted of three separate, but inter-related, studies overarching a common theme labeled as “the role played by social and environmental accounting disclosures using different methodologies and framed within legitimacy theory.”

The first study investigated whether impression management theory holds when environmental disclosures are measured for their readability and verbal tone. Corporate environmental disclosures should follow the common business communication advice to “avoid hedging” and “tell it like it is,” and, in general, to be transparent in general, regardless of firm characteristics or environmental performance. However, empirical results of this study indicate that environmental disclosures made by firms operating in environmentally sensitive industries are less readable than those made by their better-performing counterparts. Additionally, a significant negative relation was found between environmental disclosure language bias, as measured by optimism and certainty, and firm environmental performance. These findings suggest that, in general, corporations operating in environmentally sensitive industries and those labeled as poor environmental performers provide more obfuscating and biased environmental disclosures in their 10-K reports. One potential solution would consist of a standardized reporting system of environmental information, including content, format and language, across all firms subject to SEC requirements.

The second study analyzed the content and presentation of corporate website environmental disclosure in relation to firm environmental performance of four size-matched sample groups constructed based on industry environmental sensitivity and America’s Toxic 100 membership (the top 100 polluters in the US). Using a metric developed based on prior research

to measure website disclosure content and presentation, this study concludes that, on average, both the content and presentation scores of corporate website environmental disclosure were higher for firms ranked in the America's Toxic 100 than their non-Toxic counterparts. In addition, these results were shown to hold when I separately tested the disclosure content and presentation, respectively, in relation to Toxic 100 membership. However, the environmental sensitivity of firm industry did not have a significant effect on website environmental disclosure content and presentation. These findings suggest that website presentation of environmental information primarily focuses on the appearance and perception, rather than the reality, of the firm's environmental performance. Thus, Internet website users should be cautious about potential preconceived ideas about a company's environmental stewardship.

The third study examined the various strategies utilized by Total to defend and legitimize its environmental performance and activities in response to the *Erika* and AZF Toulouse incidents. As a case study, it aimed at obtaining insights on the circumstances of the events but more importantly, on the effects of Total's legitimation strategies of communication to various stakeholders. Study results obtained from a combination of different data collection methods (i.e., historiography, quantitative/qualitative content analysis of and semi-structured interviews) indicate that (1) those strategies have served as effective legitimating tools to manage and mitigate public policy and socio-economic pressures resulting from two breaches of the social contract, and (2) Total augmented its legitimacy when responding to the second incident (in comparison to the first one).

In sum, these three studies build upon prior theoretical and empirical work to substantiate and advance social and environmental accounting research using various methodological lenses and perspectives. Overall, results generally have important public policy and practical

implications, and lend support to the argument that environmental disclosures remain a powerful legitimacy device rather than an effort towards greater accountability.

**APPENDIX A:
ADVANTAGES OF COMPUTERIZED CONTENT ANALYSIS**

Advantages of computerized content analysis*

- The computer can do menial tasks, such as repetitive counting and sorting, and thereby liberating researchers for more theoretical and creative tasks.
- Not only can a computer do all the counting, it can do so with perfect reliability (i.e., computer-produced results will be the same every time the data are counted or otherwise examined).
- Computers remember, ostensibly forever.
- Computers detect continuities and discontinuities.
- If properly coached, computers can track associations across semantic space, note situational changes (and changes within those changes), distinguish the characteristics word choices of one person from those of another.
- Computers can detect the stabilities in language behavior, the things that never change.
- With computer-assisted content analysis, data sets themselves can be easily reproduced and shared with other researchers.
- Computer-assisted content analysis enjoys the benefit over human-coded data of bypassing both hand-coding and subsequent data entry of hand-coded forms, thus eliminating two stages of potential error.
- Advances in personal computers, inexpensive optical readers, and online information services that provide the full text of documents in digital forms, make computer-assisted content analysis more accessible and practical now than ever before.

* *Adapted from Diefenbach (2001, p. 14-15) and Hart (2001, p. 44)*

APPENDIX B:
DICTION: THE TEXT-ANALYSIS PROGRAM

DICTION: The Text-Analysis Program*

Author: Roderick P. Hart, University of Texas at Austin

Developers: Tom Cox and Michael Stanton

Overview

Diction is a Windows-based program that uses a series of dictionaries to search a passage for five semantic features — Activity, Optimism, Certainty, Realism, and Commonality — as well as thirty-five subfeatures. Diction conducts its searches via a 10,000-word corpus and the user can create additional (custom) dictionaries for particular research needs. The program writes its results to both alphabetic and numeric files. Output includes raw totals, percentages, and standardized scores and, for small input files, extrapolations to a 500-word norm. Diction also reports normative data for each of its forty scores based on a 20,000-item sample of contemporary discourse. The program can accept either individual or multiple passages and, at the user's discretion, provide special counts of orthographic characters and high frequency words.

History

Diction is a revised version of an earlier (mainframe) program described in Hart (1984). The newer version of the program is described in Hart (2001).

Program Features

- 1) Diction processes sixty passages (30,000 words) in one minute on a Pentium-based system; results can be viewed without leaving the program.
- 2) No programming knowledge is required to use the program; texts need not be pretreated by the researcher.
- 3) The contents of all program dictionaries can be scanned by the user.
- 4) Batch-processing permits thousands of passages to be run at once; both small and large input files are handled in a consistent manner.
- 5) Diction compares a given text's features to a data base of 20,000 previously analyzed texts; output produces both raw and standardized scores.
- 6) The program "learns" each time a text is analyzed, thereby increasing its processing speed with later texts.
- 7) Diction permits up to ten custom dictionaries to be created by the researcher for specific purposes; high frequency word or character counts can also be enumerated upon request; verbal and numerical output is customizable.
- 8) The program's numeric output can be immediately transported into standard statistical packages.

- 9) To help with later analysis, the user may add an Alpha-Numeric Identifier at the top of an input file. Once a search is completed, the Alpha-Numeric Identifier will be the first piece of data to appear in the numeric file.
- 10) The user may also use a descriptive identifier to mark a passage in the program's report file.
- 11) An extensive on-line help system is built into the program; in addition, a complete user's manual as well as 800-number and e-mail support are available.

Program Restrictions: All passages must be converted into text-only format to be processed. Also, at the discretion of the user, Diction will analyze (a) only the first 500 words of a given passage or (b) any passage up to 5,000 words in length. In the latter case, DICTION will automatically break up the passage into 500-word segments. Passages shorter than 500 words can also be processed and the user can elect to have either raw or extrapolated scores reported.

Dictionaries: Diction's word lists lie at the heart of the program. By design, no individual word is duplicated in the thirty-one dictionaries, thereby permitting a comprehensive examination of a given passage. Because its dictionaries are general ones, the program is not discipline or subject-matter dependent.

* *Source: Hart (2001)*

**APPENDIX C:
ENVIRONMENT CONCERN SCREEN FOR KLD RATINGS ON CORPORATE
SOCIAL PERFORMANCE**

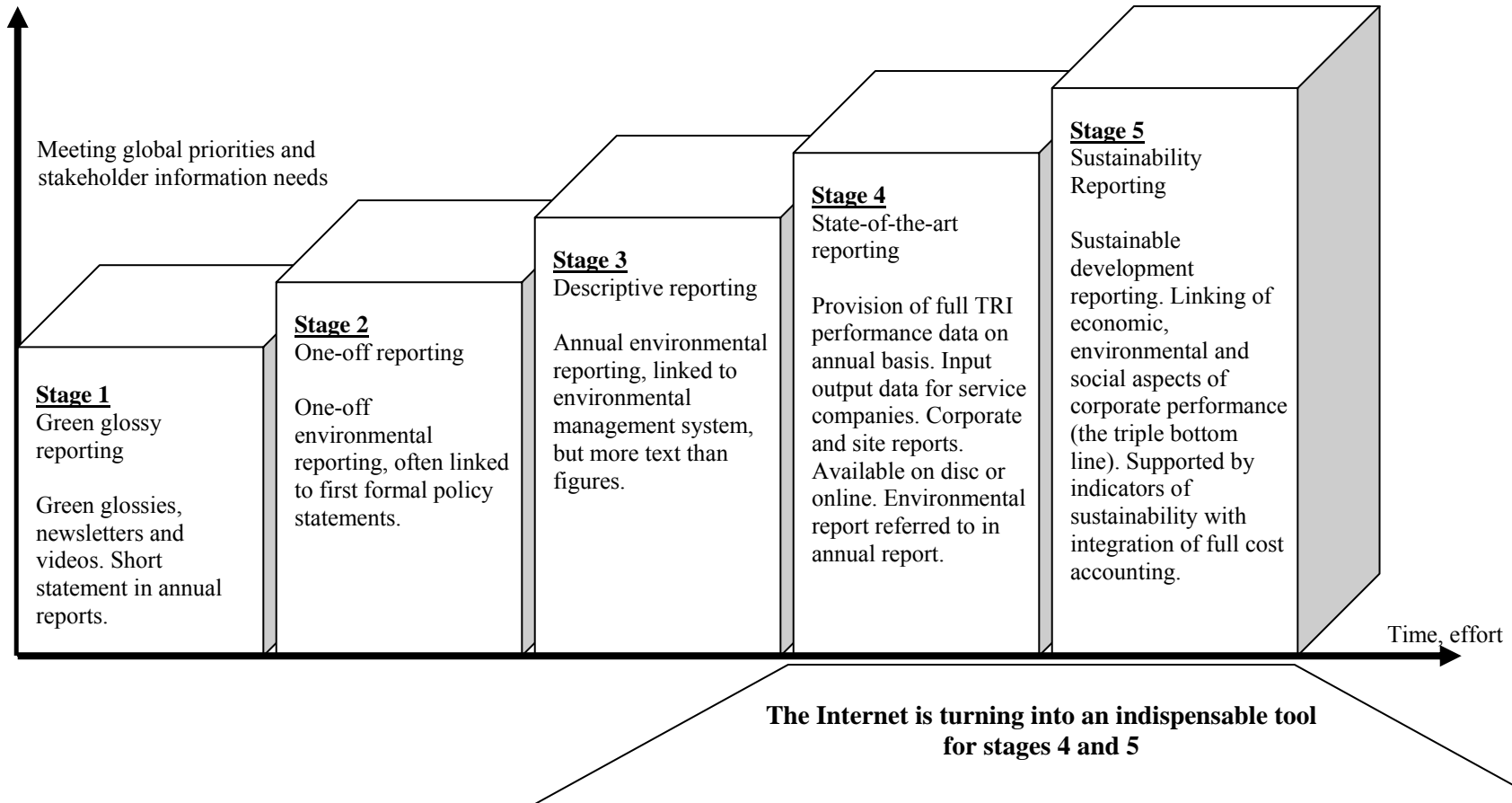
Environment Concern Screen for KLD Ratings on Corporate Social Performance*

ENVIRONMENT	
Concerns	
<i>Hazardous Waste</i>	The company's liabilities for hazardous waste sites exceed \$50 million, or the company has recently paid substantial fines or civil penalties for waste management violations. Before 1996 the threshold for liabilities was \$30 million.
<i>Regulatory Problems</i>	The company has recently paid substantial fines or civil penalties for violations of air, water, or other environmental regulations, or it has a pattern of regulatory controversies under the Clean Air Act, Clean Water Act or other major environmental regulations.
<i>Ozone Depleting Chemicals</i>	The company is among the top manufacturers of ozone depleting chemicals such as HCFCs, methyl chloroform, methylene chloride, or bromines.
<i>Substantial Emissions</i>	The company's legal emissions of toxic chemicals (as defined by and reported to the EPA) from individual plants into the air and water are among the highest of the companies followed by KLD.
<i>Agricultural Chemicals</i>	The company is a substantial producer of agricultural chemicals, <i>i.e.</i> , pesticides or chemical fertilizers.
<i>Climate Change</i>	The company derives substantial revenues from the sale of coal or oil and its derivative fuel products, or the company derives substantial revenues indirectly from the combustion of coal or oil and its derivative fuel products. Such companies include electric utilities, transportation companies with fleets of vehicles, auto and truck manufacturers, and other transportation equipment companies. KLD began assigning concerns for this issue in 1999.
<i>Other Concern</i>	The company has environmental problem not specifically covered in KLD's categories, usually an environmental accident.

* Source: KLD Research & Analytics, Inc. (2003)

**APPENDIX D:
SUSTAINABILITY / UNEP'S 5-STAGE REPORTING MODEL**

SustainAbility/UNEP's 5-stage reporting model*



* Adapted from SustainAbility/UNEP (1999) and Isenmann and Lenz (2001)

**APPENDIX E:
COMPREHENSIVE ENVIRONMENTAL DISCLOSURE EVALUATION
METRIC AND LIST OF OMITTED ITEMS**

Comprehensive environmental disclosure evaluation metric

WEBSITE ENVIRONMENTAL DISCLOSURE CONTENT*

Economic

1. Current or past capital expenditures for pollution abatement or control
2. Current or past operating costs for pollution abatement or control
3. Projection of future expenditures for pollution abatement or control
4. Projection of future operating costs for pollution abatement or control

Pollution Abatement

5. Air emission/TRI information is provided
6. Water discharge information is provided
7. Solid waste disposal information is provided
8. Pollution control or abatement facilities or processes are discussed
9. Compliance status is mentioned or discussed

Other Disclosures

10. Discussion or mention of environmental regulations or requirements
11. Statement of environmental policies or company concern for the environment
12. Conservation of natural resources is discussed
13. Mention or discussion of environmental awards
14. Recycling information/issues are discussed
15. Disclosure of an office or department for environmental control
16. Discussion of environmental attributes of products
17. Discussion of environmental audit activities
18. Discussion of exposures due to past or present remediation problems
19. Specific disclosure that the company has been named as a potentially responsible party
20. Discussion and/or disclosure of monetary accruals and/or expenses (or their existence) incurred for remediation
21. Discussion of exposures due to other, non remediation-related environmental problems

* All items (1 to 21) were reproduced from Patten and Crampton (2004)

WEBSITE ENVIRONMENTAL DISCLOSURE PRESENTATION

Technological features

1. Environmental report in Hypertext Markup Language (HTML) format^{a,b}
2. Environmental report* in Portable Document Format (PDF)^{a,b}
3. Feedback/order forms^a
4. Additional environmental documents available in PDF or other formats^a
5. Hyperlinks inside the environmental report^b

Interactive and multimedia environmental information

6. Graphic images (pictures, charts)^{a,b}
7. Flashes^b
8. Audio/Sound files or clips^b
9. Video files or clips^b
10. Interactive adventure stories/games^a

Structure and navigation (environmental section of website)

11. Page divided into frames^b
12. Transparent link on main home page to get to environmental information^c
13. Number of clicks to get to environmental information < 1 (encoded zero if more)^b
14. Pull-down or click-over menu^b
15. Next/previous buttons to navigate sequentially^b
16. Internal hyperlinks^a
17. External hyperlinks^a

Convenience and usability of website

18. Change to printing friendly format possible^b
19. Function to recommend the page^b
20. Direct e-mail hyperlink or contact details of environmental team^{a,b}

^a Item was adapted from Jones et al. (1998)

^b Item was adapted from Marston and Polei (2004)

^c Item was created as a variation based on item # 13

* This report can also be called the Environmental Statement, Citizenship Report, the Sustainability Report, the Health, Safety and Environmental Report or the Corporate Social Responsibility Report. All these reports are integrative of environmental information provided by companies.

List of omitted items from sources

Item	Source	Reason for exclusion
Loading time of the website < 10 seconds	Marston and Polei (2004)	Feature was present for all examined websites
Text only alternative available	Marston and Polei (2004)	Feature was absent for all examined websites
Financial data in processable format	Marston and Polei (2004)	Feature was not applicable to environmental website disclosure
Help site	Marston and Polei (2004)	Feature was not relevant specifically to environmental website disclosure
Table of content/site map	Marston and Polei (2004)	Feature was not relevant specifically to environmental website disclosure
Internal search engine	Marston and Polei (2004)	Feature was not relevant specifically to environmental website disclosure
Online investor information order service	Marston and Polei (2004)	Feature was not applicable to environmental website disclosure
Mailing list	Marston and Polei (2004)	Feature was absent for all examined websites
Number of clicks to get to press releases or news	Marston and Polei (2004)	Feature was not applicable to environmental website disclosure
Clear boundaries between the annual report (audited) and other information	Marston and Polei (2004)	Feature was not applicable to environmental website disclosure
Service to change data in the Share register online	Marston and Polei (2004)	Feature was not applicable to environmental website disclosure
Environmental education	Jones et al. (1999)	Feature was absent for all examined websites
Environmental forums	Jones et al. (1999)	Feature was absent for all examined websites
Site design	Jones et al. (1999)	Feature was captured by other individual items included in the metric
Navigation	Jones et al. (1999)	Feature was captured by other individual items included in the metric
Regular updates	Jones et al. (1999)	Feature was captured by the external/internal hyperlinks items
Site promotion	Jones et al. (1999)	Based on its definition, feature was not applicable to this research

**APPENDIX F:
HISTORY OF TOTAL S.A.**

History of Total S.A.*

1924: Compagnie Française de Pétroles (CFP) is established to oversee France's oil rights in Mesopotamia.

March 19, 1929: The French government acquires a 25% stake in CFP and a 10% stake in a new refining subsidiary created by CFP, the “Compagnie Française de Raffinage” (CFR).

July 08, 1931: The French parliament ratifies an increase in the state's stake from 25% to 35%.

1933: CFR opens its first refinery at Gonfreville near Le Havre in Normandie.

1936: CFR supplies nearly 20% of French demand for refined oils from two plants in Normandy and La Mede in Provence.

1940: With the country's first defeat by Germany in WWII, CFP is blocked from any further expansion, and its stake in the Iraq Petroleum Company is held by its partners until the war ends.

1945: The company's annual supply of oil from the Middle East is 806,000 tons.

1946: “Compagnie Française de Distribution en Afrique” is created to sell CFP's refined oil products in francophone Africa.

1947: The company signs an agreement with the Venezuelan oil company Pantepec.

1948: The U.S. partners end the “Red Line” agreement (a pact that limits member's competition within the Middle Eastern region).

1950: CFP's oil supply from the Middle East totals 1.61 million tons.

1952: A 30-inch pipeline from Kirkouk in Iraq to the Syrian port of Baniyas is opened.

1953: Annual oil supply from the Middle East increases to 8.824 million tons.

1954: Marketing its products in northern Africa, France, and other European areas, the company introduces the brand name Total. CFP buys a six percent stake in an international consortium of oil companies, led by Anglo-Iranian Oil Co.

1956: A huge oil field is discovered in Hassi-Messaoud and later, a gas field in Hassi R'Mel. Also this decade, CFP begins supplying crude to Japan, South Korea, and Taiwan and enters the petrochemical market.

1960: CFP gains control over Omnium Français de Pétroles and its valuable distribution outlets in north Africa.

1961: Refineries belonging to CFP or working on their behalf treat 12 million tons of oil; seven million of the tons are distributed under the “Total” brand name.

1966: Independent distributor Desmarais Freres is acquired.

1971: Algeria nationalizes the assets of CFP. Rene Granier de Lilliac is appointed chairman. Discoveries are made in the North Sea.

1975: CFR's refineries are working at only 65% capacity. CFD creates a joint subsidiary Minatime, with Pechiney-Ugine-Kuhlmann.

1985: The company incorporates as “Total Compagnie Française de Pétroles”. Unprofitable refineries are shut down in France, West Germany, and Italy.

1990: Total expands its list of specialty chemicals with the purchase of Orkem's coating.

1991: The company shortens its name to “Total” and is listed for the first time on the New York Stock Exchange and included in the CAC 40 index.

1992: The government of France announces plans to reduce its 34% share in Total to five percent by selling a portion of it publicly and distributing the rest to various public banks and insurance companies. Total has closed 900 service stations in France since 1985, and an additional 900 will close by 1994, leaving the Group with 3,000.

1994: Total remains France's second largest oil company, with interests in chemicals, uranium, and coal.

1995: Total is chosen to direct the Yemen gas liquefaction project. The company signs a contract for the development of Iranian offshore fields Sirri A and E.

1996: The French government reduces its stake in Total to less than one percent.

February 1997: Announces plans to divest Total Petroleum to Ultramar Diamond Shamrock PLC in a \$400 million transaction.

July 1997: Reduces its stake in two of Abu Dhabi Gas Liquefaction Company's natural gas lines to five percent apiece.

December 1998: Total enters into an agreement to acquire Belgian-based PetroFina A.S., forming Europe's third-largest and the world's sixth-largest oil company.

May 1999: Total acquires the remaining 34% of U.K. paints manufacturer Kalon Group plc that it doesn't already own.

June 1999: Total S.A. acquires 94.3% of PetroFina, and changes its own name to Total Fina S.A.

1999 Sept.: Total Fina agrees to acquire Elf Aquitaine S.A. in a \$48.7 billion deal that will form the world's fourth-largest oil company, behind Exxon-Mobil, Shell, and BP Amoco.

1999 Oct.: Total Fina sells its Inks division to Japanese-based Sun Chemical Group.

2000 March: After completing its acquisition of Elf as a 95%-owned subsidiary, Total Fina changes its name to TotalFinaElf S.A. (TFE). Thierry Desmarest, Chairman and CEO of Total Fina, assumes those roles at Elf. TFE then extends an exchange offer for the remaining shares of Elf that it doesn't own.

2000 June: TFE enters into an agreement to acquire the 33% interest held by Broken Hill Proprietary Co. Ltd. in Brazilian pipeline operator BBPP Holdings Ltd.

2001: Net income climbs 11% to \$6.5 billion. Upstream production increases 3.6%, while downstream operating income falls six percent.

2002: TFE focuses its efforts on three geographic areas: the Middle East, Venezuela, and West Africa.

2003: TFE simplifies its name to "Total SA.". Profits grow 41% to \$8.8 billion.

2004: The European Commission investigates Total S.A. for its alleged involvement in a hydrogen peroxide, paints, and solvents price fixing cartel.

September 2004: Total agrees to pay \$900 million for a 25% stake in OAO Novatek, the number two producer of natural gas in Russia.

2005: In terms of market capitalization, which totals \$133.5 billion, Total S.A. is the world's fourth-largest public oil concern.

March 2005: Not certain that Russian authorities will allow it to sell 25% of itself to a foreign company, Novatek begins to renegotiate the deal with Total.

** Source: Total Final Elf SA (2005)*

**APPENDIX G:
GENERAL INFORMATION ABOUT TOTAL S.A.**

General information about Total S.A.*

Name	Total S.A.
Headquarters	2, Place de la Coupole La Défense 92400 Courbevoie France Tel: +33-1-47-44-58-53
Primary U.S. Office	444 Madison Ave, 42nd Fl. New York, NY 10022 USA Tel: +1-212-922-3065
Incorporated	1924, France
Articles of Incorporation	On file with Maîtres Gildas Le Gonidec de Kerhalic and Frédéric Lucet, notaries in Paris
Business Form and Nationality	Business corporation governed by French law
Business Registry	542 051 180 RCS Nanterre
Share Capital	6,350,151,080 euros consisting of 635,015,108 shares as of December 31, 2004
Number of Shareholders	520,000 (as of 12/31/2004)
Annual Meeting	In May
Chairman and Chief Executive Officer	Thierry Desmarest, 59 Since 1995 until 2007 Holds 58,300 shares
Statutory Auditor	KPMG*
Number of Employees	111,401 (average staff as of 12/31/2004)
Fiscal Year-End	December 31
Ticker	TOT
CUSIP	89151E109
Stock Exchange	CAC 40 (France) and NYSE (U.S.)
Primary SIC	1311 – Crude petroleum and natural gas
Industries	<u>Energy & Utilities</u> <ul style="list-style-type: none"> ➤ Oil & Gas Refining, Marketing & Distribution (primary) ➤ Oil & Gas Exploration & Production ➤ Oil & Gas Transportation & Storage <u>Retail</u> <ul style="list-style-type: none"> ➤ Gasoline Retailers
Top Competitors	BP Exxon Mobil Royal Dutch/Shell Group ConocoPhillips Chevron
Company Website	www.total.com

* Sources: Total 2004 annual report; Hoovers (2006); Mergent (2006)

**APPENDIX H:
INTERVIEW QUESTIONS**

Interview questions*

Erika

- How would you assess the level of your familiarity about the 1999 Erika oil spill in Bretagne?
- Do you recall how you learned about this accident and what were your first reactions/impressions when you heard about it?
- Did this major incident have an impact on the way French people think about the environment? Did the incident make the environment a more sensitive issue in France today it was 10 years ago? What was it like to be in France at the time of the oil spill?
- What was the role played by the media at that time? How would you assess the way information was diffused by the media via newspapers, TV or press releases?
- In your opinion, who is (are) responsible for the 1999 Erika oil spill?
- Fingers seemed to be pointed at Total S.A. at that time and thereafter. In your opinion, do you think the accusations against the company were fair?
- In your opinion, how did Total handle this particular crisis? Did you perceive or feel a change in the way Total portrayed their image?
- How were the claims, disclosures, and/or press releases made by Total received by the public in general? By you?
- In your opinion, did the company successfully and efficiently handle this crisis?
- Is your opinion today different from the one you had at the time of the incident? Why? Is there closure or is it still unfinished business?
- Any other insights on the incident and the reaction of the public and the company?

AZF Toulouse

- How would you assess the level of your familiarity about the 2001 AZF plant explosion in Toulouse?
- Do you recall how you learned about this accident and what were your first reactions/impressions when you heard about it?
- Did this major incident have an impact on French people in general? Did the incident make the corporate social responsibility and environmental issues more sensitive issue in France today it was 10 years ago? What was it like to be in France at the time of the explosion?
- What was the role played by the media at that time? How would you assess the way information was diffused by the media via newspapers, TV or press releases?
- In your opinion, who is (are) responsible for the 2001 AZF Toulouse chemical plant explosion?
- Fingers seemed to be pointed at Total S.A. at that time and thereafter. In your opinion, do you think the accusations against the company were fair?
- Do you believe that the post-Erika impact made it worse in terms of negative publicity for the company?
- In your opinion, how did Total handle this particular crisis? Do you think that the Erika incident was an (important) factor in how the company managed the AZF crisis? Did you perceive or feel a change in the way Total portrayed their image?
- How were the claims, disclosures, and/or press releases made by Total received by the public in general? By you?
- In your opinion, did the company successfully handle this crisis?
- Is your opinion today different from the one you had at the time of the incident? Why? Is there closure or is it still unfinished business?
- Any other insights on the incident and the reaction of the public and the company?

** Not all interview questions were always asked in a consistent, systematic order and sometimes additional questions and discussion topics were covered during the interview due to the semi-structured and "open" nature of the interviews. Interview data were primarily used for content analysis purposes.*

**APPENDIX I:
INTERVIEW DETAILS**

Interview details

Date of Interview	Informant	Organization	Position
June 2006	1	Total S.A.	Former employee
June 2006	2	Vigeo Group	Analyst
June 2006	3	FCRSE	CSR consultant
June 2006	4	CFIE	CSR consultant
June 2006	5	N/A	Local constituent
June 2006	6	Total S.A.	Former employee
June 2006	7	AXA Investments	Analyst
June 2006	8	GreenPeace	Staff
June 2006	9	Société Générale	Financial analyst
June 2006	10	Total S.A.	Sustainable development manager
July 2006	11	Plus jamais ça ni ici ni ailleurs	Victims' association member
July 2006	12	Plus jamais ça ni ici ni ailleurs	Victims' association member
July 2006	13	Total S.A.	Chemicals division employee
July 2006	14	Law firm	Partner

**APPENDIX J:
ENVIRONMENTAL DISCLOSURE CONTENT ANALYSIS ITEMS**

Environmental disclosure content analysis items*

1. Statement or discussion of specific environmental regulations or requirements.
 2. Statement or discussion of the company's processes, pollution control facilities, or product innovation relative to reduction of environmental degradation.
 3. Statement or discussion of the company's environmental compliance status with environmental regulation or requirements.
 4. Statement or discussion of the company's environmental policy, concern or commitment to protect the environment.
 5. Disclosure of current or past years' capital expenditures for pollution control or abatement.
 6. Disclosure of projected future capital expenditures for pollution control or abatement.
 7. Disclosure of current or past years' operating costs for pollution control or abatement.
 8. Disclosure of projected future operating costs for pollution control or abatement.
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* Adapted from Patten (2002) and Cho et al. (2006)