Accounting for the unaccountable: Biodiversity reporting and impression management

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Abstract

This paper explores the strategies organizations use to demonstrate their accountability for biodiversity and legitimize their impact in this area through the use of techniques of neutralization. Neutralization aims to manage stakeholder impressions on very socially sensitive issues. Based on the content analysis of 148 sustainability reports from mining organizations, the study sheds light on the successful use of rhetoric in reports on non-measurable and potentially unaccountable issues. Specifically, the study shows that mining organizations use four main techniques of neutralization when they explain their impact on biodiversity. When they address stakeholders, they defend their social legitimacy and environmental responsiveness using one of the four techniques: they claim of a net positive or neutral impact on biodiversity, they deny that they have a significant impact, they distance themselves from the impact of their actions, and they play down their responsibilities. The study contributes to the literature on corporate sustainability and accounting for stakeholders. It focuses on under-researched issues such as the management of biodiversity and the tactics used to rationalize negative impacts. The study also bridges the gap between theories about organizational legitimacy, impression management, and techniques of neutralization.

Keywords Accountability · Sustainability · Biodiversity · Reporting · Impression management · GRI · Techniques of neutralization

Introduction

Accounting for sustainability is essential to corporate greening, and has been the subject of a growing body of literature (Gray 1992, 2006; Kolk 2008; Boiral and Gendron 2011). Although under-researched, accounting for biodiversity is increasingly important for managers, especially in the sectors of activities that deeply affect natural habitats (GRI 2007; Jones and Solomon 2013; Bonini and Oppeinheim 2010; Rimmel and Jonäll 2013; van Liempd and Busch 2013). This is true of mining activities, which are often located in remote areas and vulnerable ecosystems hosting various endangered species (Kitula 2006; Azapagic 2004). The increasing demand for natural resources and competition among mining organizations to access new exploitation sites have increased the risk of impacts on vulnerable and formerly undisturbed ecosystems. The protection of these ecosystems is clearly one of the most critical sustainability issues, and the rapid loss of biodiversity has been widely denounced (Jones and Solomon 2013; Secretariat of the Convention on

Biological Diversity 2010). From this perspective, biodiversity is an important issue for mining organizations, which are called upon to demonstrate their accountability and respond to increasing pressures in this area (Bonini and Oppeinheim 2010; Boiral 2013; Azapagic 2004).

Whether organizations address such challenges substantially, and what impression management tactics they use to influence stakeholders' perceptions, remain open questions. Since reporting on biodiversity impacts can undermine corporate image, especially for mining organizations, it seems reasonable to presume that the information disclosed in sustainability reports is shaped rather by neutralization techniques than by the search for greater transparency and compliance with reporting standards. The techniques of neutralization are an impression management tactic used to rationalize, through socially acceptable arguments, the occurrence of unethical behavior or negative impacts (Vitell and Grove 1987; Strutton et al. 1994; Sykes and Matza 1957). Techniques of neutralization were originally described by Sykes and Matza (1957) to analyze the explanations offenders gave to justify their criminal acts and neutralize the resulting guilt. The techniques can also be used by organizations when they explain ethical issues to stakeholders (Fooks et al. 2012; Benoit and Czerwinski 1997). These techniques, though still largely unexplored in management, have been analyzed successfully in various areas and disciplines, including offenders' behaviors, deviance in the workplace, normalization of corrupt practices, crisis communication, image repair, and marketing ethics (Maruna and Copes 2005; Benoit and Czerwinski 1997).

The objective of this paper is to explore the strategies that mining organizations use to demonstrate their accountability with respect to biodiversity issues and the role of the techniques of neutralization in legitimizing their impacts in this area.

Reporting on Biodiversity: New Requirement or Mere Window-Dressing?

Improving Accountability for Biodiversity: A Critical Issue for Corporate Sustainability

Corporate accountability generally refers to the explanations or justifications of performance and actions to stakeholders to whom organizations are deemed to be accountable (Gray 1992; Kolk 2008; Boiral 2013). Although accounting for biodiversity remains understudied (Jones and Solomon 2013; Jones 1996, 2003), it represents a major issue that needs to be investigated more extensively for at least two main interrelated reasons: the seriousness of biodiversity issues, and the need for increased transparency and monitoring of actions in this area.

First, biodiversity loss and the massive extinction of many species are increasingly considered to be the main threats to sustainable development (Secretariat of the Convention on Biological Diversity 2010; Jones and Solomon 2013). According to the International Union for the Conservation of Nature (IUCN), out of 47,677 comprehensively assessed species, nearly 20 % are already extinct, critically endangered or endangered, and 37 % are vulnerable or near threatened (Secretariat of the Convention on Biological Diversity 2010). From this perspective, it seems logical that organizations whose activities might represent a

direct threat to biodiversity should give an account of their impacts on natural habitats and actions implemented to manage this issue. This is the case of many mining activities which can have serious impacts on biodiversity, such as degradation of indigenous vegetation, fragmentation of habitats, erosion and pollution of soils on which many species rely for their survival, contamination of aquatic ecosystems from waste materials, and so on (Kitula 2006; Wishart 2012). Second, programs for biodiversity protection have been widely criticized for their lack of follow-up, transparency, and tangible results (Maestre Andrés et al. 2012; Miteva et al. 2012). As summarized by Miteva et al. (2012), ‘‘credible evaluation of common conservation instruments continue to be rare’’ (p. 69). The complexity of biodiversity issues, the large number of uncoordinated players involved, and inadequate resources may explain this lack of convincing evidence of effective actions. From this perspective, the release of more reliable information on biodiversity issues through sustainability reporting is essential to reinforce corporate accountability and transparency. Although the analysis of biodiversity issues, and sustainability reporting in general, may require a more global approach going beyond the scope of corporate control (Milne and Gray 2013; Milne 1996), the existence of reliable indicators and reporting frameworks is necessary to strengthen corporate accountability.

The GRI: Toward Better Transparency on Biodiversity?

Previously confined to few proactive organizations, sustainability reporting has become a common practice, particularly among large companies (Higgins et al. 2014; KPMG 2013). In 2013, more than 70 % of the top 100 largest companies across 41 countries published a sustainability report, and this proportion continues to rise rapidly, notably in developing countries (KPMG 2013). The credibility and reliability of these reports have been associated with the use of recognized standards, notably the Global Reporting Initiative (GRI) which has been adopted in around 80 % of reports from large organizations (KPMG 2013). The GRI is generally considered to be the most reliable and detailed reporting framework (Daub 2007; Morhardt et al. 2002). This framework proposes detailed information on a large array of indicators on different aspects of sustainability, such as the economy, the environment, labor practices and decent work, human rights, society, and product responsibility (GRI 2006). This broad focus makes it possible to embrace a comprehensive vision of sustainability and to integrate specific issues which are often forgotten, including biodiversity. The existence of different levels of application of the standard in the G3.1 version also helps clarify the reliability assessment of the sustainability report. These application levels (from A+ to C) depend on the extent to which the standard is completely applied and the existence of external verification or assurance of the report (GRI 2006). The GRI requirements for biodiversity are based on five main indicators (EN11 to EN 15). These indicators cover two main issues related to biodiversity accountability:

- The possible impacts on biodiversity: EN11 (location of land adjacent to protected areas and areas of high biodiversity value outside protected areas), EN12 (significant impact of activities on biodiversity), and EN15 (number of IUCN Red List species and national conservation list species with habitats in areas affected by operations);

- The commitment and actions taken to preserve biodiversity: EN13 (habitats protected or restored) and EN14 (strategies, current actions, and future plans for managing impacts on biodiversity).

Nevertheless, the manner in which these indicators are applied and, more generally, the reporting on biodiversity by organizations remain largely underexplored in the literature.

In a recent study based on content analysis and interviews of representatives from 29 Swedish companies, Rimmel and Jonäll (2013) show that the information reported on biodiversity is variable but remains overall quite limited, including information from companies exposed to high biodiversity risk. In most organizations, external pressures, which are considered to be one of the main drivers of biodiversity reporting, are quite limited. The use of the GRI framework has nevertheless facilitated biodiversity reporting, and managers are expected to disclose more information on this issue in the future. However, the sample studied by Rimmel and Jonäll is relatively limited and the results remain inconclusive on the content and tendency of biodiversity reporting. The study of van Liempd and Busch (2013) based on biodiversity disclosure from 27 large Danish companies finds similar results and highlights the lack of information reported in relation to the importance of the issue.

Other studies on biodiversity and organizations mainly focus on the manner of implementing biodiversity accounting in general and using this information. In his pioneering research on biodiversity accounting, Jones (1996) proposes a comprehensive model based on various stages of natural inventories organized hierarchically depending on the vulnerability and critical importance of different species. This natural inventory model was successfully applied to the Elan Valley Nature Reserve in the UK (Jones 2003) and, more recently, to a large mangrove forest in Bangladesh (Siddiqui 2013). The implications of this accounting framework for the application of the 'polluter-pays' principle and for business strategies have also been explored (Houdet et al. 2012). Other research in this area focuses essentially on the economic and financial implications of estimating and offsetting biodiversity losses (Cuckston 2013; Freeman and Groom 2013; Tregidga 2013). The development of offsetting guidelines and programs, notably the Business and Biodiversity Offsets Programme (BBOP 2013), has reinforced the need for more biodiversity accounting and performance measurements. Nevertheless, as stressed by Tregidga (2013), the uncertainties, complexity, quantification difficulties, and political issues related to biodiversity offsetting raise serious questions about the transparency, accountability, and real impacts of BBOP practices.

Generally speaking, although the emerging literature on biodiversity reporting sheds more light on various challenges faced by biodiversity accounting and proposes promising avenues for solutions, it remains quite limited and most studies are based on the assumption that the release of more information on biodiversity is necessary to reinforce corporate accountability. But the quantity of information reported is not necessarily related to the quality of the reporting and even less to sustainability performance or corporate practices (e.g., Cho et al. 2012; Milne et al. 2006, 2009; Bowen and Aragon-Correa 2014; Merkl-Davies and Koller 2012; Hrasky 2012). Moreover, as stressed by Jones and Solomon (2013), corporate communication on biodiversity remains under-researched. More specifically, it is unclear whether the current reporting practices for biodiversity should be considered as mere

window-dressing intended to improve corporate image or as a way to introduce more transparency and accountability to this area. These types of issues have been explored by the critical literature on sustainability accounting, albeit from a general perspective, not specifically focused on biodiversity.

Reporting on Biodiversity or Managing Impressions?

Most research on biodiversity accountability stresses the scarcity of information released by organizations and, therefore, the need for more detailed reports (van Liempd and Busch 2013; Rimmel and Jonäll 2013; Jones and Solomon 2013). Nevertheless, according to the critical literature on sustainability reporting, it is questionable whether the information released by organizations is reliable and contributes to greater accountability (Gray 2010, 2006; Milne et al. 2006, 2009; Tregidga et al. 2014; Boiral 2013). Generally speaking, sustainability reports can be used as a tool for managing impressions among stakeholders rather than as a transparent source of information on sustainability practices and performance (Cho et al. 2012; Bansal and Clelland 2004). According to the literature on impression management, organizations use various tactics to influence the perceptions of stakeholders in order to protect or improve their image (Bansal and Kistruck 2006; Bansal and Clelland 2004; Bolino et al. 2008). These tactics of communication are especially important when organizations face social pressures likely to threaten their social legitimacy, such as external criticism related to environmental impacts (Cho et al. 2012; Bansal and Kistruck 2006; Bansal and Clelland 2004). Bansal and Kistruck (2006) and Bansal and Clelland (2004) have explored the impression management tactics used by firms to improve their social legitimacy with regard to environmental issues and the ways in which stakeholders may respond to such tactics. According to these studies on environmental issues, impression management appears to be a low-cost and easy alternative to more substantial actions for improving social legitimacy. In their qualitative study on the perceptions of social and environmental reporting by UK institutional investors, Solomon et al. (2013) are even more critical. This study shows how the sustainability concerns expressed by these investors are essentially a myth, disconnected from reality and based on impression management tactics. Boiral (2013) shows that the information and images released in sustainability reports can be considered to be a simulacrum, camouflaging the real sustainable development issues and projecting an idealized view of organizations to positively influence stakeholders' perceptions.

Generally speaking, impression management is used to restore the congruence between the organizational image and social expectations or to provide a moral justification of unethical behaviors (Fooks et al. 2012). This moral justification is similar to the techniques of neutralization used by delinquents to explain their misbehaviors: denial of responsibility, denial of injury, denial of victim, condemning the condemners, and appealing to higher loyalties (Bolino et al. 2008; Sykes and Matza 1957). Although the extensive literature on impression management and neutralization techniques originally focused mostly on the individual level of analysis, a growing body of research applies this approach to organizations, including the management of environmental and ethical issues (Bolino et al. 2008; Lim 2002). The use of techniques of neutralization at the organizational level can be defined as the release of information aimed at rationalizing and legitimizing, through different types of socially acceptable arguments, the occurrence of unethical behaviors,

negative impacts or issues that could undermine the image of the organizations, managers, or employees. In this sense, the techniques of neutralization are impression management tactics and are used when organizations or individuals must release information on negative or compromising aspects. The techniques of neutralization have been analyzed in research on the justification of unethical behaviors by marketing professionals (Vitell and Grove 1987), rationalization of ethical issues inside tobacco companies (Fooks et al. 2012), or crisis communication and image repair discourse (Benoit and Czerwinski 1997). More recently, in their case study on the strategies for climate change and impression management tactics, Talbot and Boiral (2014) have identified various neutralization techniques used by large industrial emitters to rationalize their impacts, such as self-proclaimed excellence, denial and minimization, denouncing unfair treatment and deceptive appearances, or economic and technological blackmail.

The Techniques of Neutralization Underlying Biodiversity Reporting

As far as could be established, the emerging literature on the techniques of neutralization used by organizations has not been focused on biodiversity and sustainability reporting. Nevertheless, one can assume that biodiversity reporting and sustainability reports in general are shaped by techniques of neutralization and impression management strategies for at least four complementary and interdependent reasons: the reputational risks related to the increasing institutional pressures for protecting biodiversity, focus on justifications rather than actions in sustainability reporting, managerial capture of information, and lack of measurability of biodiversity performance.

First, the institutional pressures for protecting biodiversity have increased over the last few years (Jones and Solomon 2013). Although only a minority of organizations have implemented concrete measures in this area, the protection of biodiversity is increasingly perceived as a major issue by managers and society as a whole (Rimmel and Jonäll 2013; van Liempd and Busch 2013; GRI 2007). According to the McKinsey global survey on biodiversity and corporate strategy, more than 50 % of managers believe that biodiversity is important to build, maintain, or improve their company's reputation, and better communication on the use of natural resources is the most frequent action implemented in this area (Bonini and Oppeinheim 2010). From this perspective, the disclosure of negative information on biodiversity impacts can create reputational risk and undermine the legitimacy of organizations. Impression management strategies can be used to reduce or neutralize those reputational risks of polluting organization (Bebbington et al. 2008; Craig and Brennan 2012). The techniques of neutralization are therefore used to positively influence the perceptions of stakeholders, avoid self-critical statements, and/or obscure the compromising information released. This search for organizational legitimacy through the disclosure of information on social and environmental issues is at the base of various studies on neo-institutional theory and sustainability accountability (e.g., Unerman et al. 2007; Deegan 2002; Cho and Patten 2007; Cho et al. 2012).

Second, like the techniques of neutralization themselves, sustainability reporting is essentially based on words and justifications rather than actions (e.g., Milne et al. 2009; Milne and Gray 2013; Milne et al. 2006). Although the corporate discourse on sustainability tends to suggest

that companies are ‘‘moving towards sustainability’’ (Milne and Gray 2013, p. 24), the information disclosed is rarely sufficient to substantiate real change (Milne et al. 2006). As a result, this information can be used to mask business-as-usual and distract attention from real sustainability issues (Moneva et al. 2006; Milne and Gray 2007, 2013). The tendency of more polluting organizations exposed to strong external pressures to increase the disclosure of information on sustainability compared to other organizations seems to confirm the use of sustainability reporting as a tool for symbolic management intended to increase social legitimacy (Cho et al. 2012; Milne and Gray 2013). Contrary to substantive management, which is based on material changes to increase organizational legitimacy, symbolic management focuses on appearances and self-justification: ‘‘rather than actually change its ways, the organization might simply portray - or symbolically manage - them so as to appear consistent with social values and expectations’’ (Ashforth and Gibbs 1990, p. 180). From this perspective, the use of techniques of neutralization in biodiversity reporting appears to be a means of self-justification in an area where organizational impacts are not consistent with social expectations. As stated by Scott and Lyman (1968, p. 46) in their seminal paper on the sociology of talk, accounts are essentially based on statements ‘‘made to explain untoward behavior and bridge the gap between actions and expectations.’’ The techniques of neutralization are used to bridge this gap: ‘‘excuses and justifications are socially approved vocabularies which neutralize an act or its consequences when one or both are called into question’’ (Scott and Lyman 1968, p. 46).

Third, sustainability reporting is shaped by the managerial and ideological capture of information (Owen et al. 2000; Milne and Gray 2013; Milne et al. 2009), whose collection and release reflect the interests of organizations rather than those of the stakeholders (Moneva et al. 2006; Milne and Gray 2007; Milne et al. 2009). The reporting process rarely involves the stakeholders, and tends to be conditioned by a rationale of public relations rather than transparency (Unerman et al. 2007; Tregidga et al. 2014; Boiral 2013). For example, the study of Hahn and Lülfs (2014) identifies various legitimization strategies used in sustainability reporting (e.g., marginalization, abstraction, and indicating facts). Likewise, Milne et al. (2009) describe the rhetoric of sustainability reports as based on various strategies of symbolic construction which are often disconnected from actions and mostly aim to increase organizational legitimacy among stakeholders (e.g., rationalization, universalization, and displacement). These strategies tend to be shaped by the ideology of ‘‘production–expansion’’ (Milne et al. 2009, p. 1218) and they therefore reinforce the business-as-usual model (Milne and Gray 2013; Milne et al. 2006, 2009). Generally speaking, because the language used in organizational reporting is controlled by managers, it is essentially based on positive statements and the neutralization of negative aspects, which tend to be attributed to external circumstances (Merkl-Davies and Koller 2012; Hrasky 2012; Craig and Brennan 2012; Boiral 2013). From this perspective, the techniques of neutralization reflect the control of information by managers and are indicative of their efforts to keep up appearances and preserve corporate interests rather than to inform the stakeholders. Therefore, the managerial and ideological capture of information reinforces the focus on positive aspects only and tends to project an idealized image of reality, which can contribute to greenwashing (Cho et al. 2010; Laufer 2003; Tregidga et al. 2014; Boiral 2013; Bowen and Aragon-Correa 2014).

Fourth, biodiversity accountability and sustainability reporting in general require the existence of clear indicators to measure performance. Such indicators should measure not only corporate impacts but also the deterioration or improvement of ecosystems at a more global level (Milne and Gray 2013; Gray 2006, 2010). Although the GRI is supposed to be based on reliable, transparent, and comprehensive indicators (GRI 2006), the measurability and comparability of these indicators—including in the field of biodiversity—remains uncertain (Boiral 2013). This uncertainty is reflected at a more global level. Despite the development of various accounting methods, the manners of measuring biodiversity issues and evaluating conservation programs are far from generally agreed upon (Failing and Gregory 2003; Jones 1996; Tregidga 2013; Miteva et al. 2012; Maestre Andrés et al. 2012). As a result, the performance of organizations with regard to biodiversity remains, to a large extent, unaccountable. This unaccountability tends to reinforce the ''disconnect between the practice of sustainability reporting and (…) sustaining the life-supporting ecological systems on which humanity and others species depend'' (Milne and Gray 2013, p. 13). Such disconnection and the complexity of biodiversity issues in general tend to foster the use of various techniques of neutralization whose relevance and validity can hardly be verified by stakeholders. Overall, as pointed out by Bansal and Kistruck (2006), the complexity, opacity, and uncertainty of environmental issues encourage impression management and symbolic rather than substantive commitment on the part of the organizations. As a result, the management of impressions through techniques of neutralization seems easier than the release of substantial and transparent information on an issue as complex, opaque, and socially sensitive as biodiversity.

Although the use of techniques of neutralization seems consistent with the critical literature on sustainability reporting, the nature of these techniques and the manner in which organizations respond to biodiversity requirements in their GRI reports remain underexplored. The exploration of these issues is essential to evaluate the credibility of accountability mechanisms in this area and address the need for studies on communication issues pointed out by Jones and Solomon (2013).

Methods

The objective of this paper is to explore, through the analysis of GRI sustainability reports from the mining industry, how organizations attempt to demonstrate their accountability for biodiversity and the techniques of neutralization they use to legitimize their possible impacts in this area. The exploratory and interpretative nature of this study requires a qualitative approach.

Data Collection

The data collection focused on biodiversity issues in GRI reports (G3.1 version) by mining organizations for the period 2008–2010. The choice of mining organizations is explained by the significant impacts that mining operations can have on biodiversity, such as the extraction of natural resources in remote and often ecologically sensitive areas, environmental impacts of raw material processing, building roads to access mining sites, and issues related to the

restoration of contaminated sites (Kitula 2006; Wishart 2012). The focus on GRI G3.1 reports is justified by the widespread use of this standard in large mining organizations and the existence of specific indicators on biodiversity (GRI 2006, 2007). Although the G4 version is more recent, it was released in May 2013, after the timeframe of this study, and was therefore not adopted by the reports analyzed. Finally, the selection of reports related to the 2008–2010 (3-year) period was dictated by the time delay necessary to publish sustainability reports and the relevance of longitudinal studies. First, the time lag between the year covered by the sustainability report and the date on which the report is actually released can be of 1 year or more. As a result, reports for the year 2010 could be released in 2011 or 2012. Because data analysis was conducted in 2012–2013, it was not possible to select a homogeneous sample based on more recently reporting years. Second, the analysis of three consecutive years appeared relevant to explore certain trends, such as the evolution of the volume of information released on biodiversity.

The sustainability reports analyzed were obtained from the sustainability disclosure database provided by the GRI, available online.[1] This database contained, in 2013, nearly 12,000 GRI reports and made it possible to search reports by publication year and sector of activity. All GRI reports from the mining industry between 2008 and 2010 available in English or French were extracted and subsequently analyzed. With the exception of three documents, all reports were in English. All in all, 148 reports were analyzed, including 36 for the year 2008, 57 for 2009, and 55 for 2010. Table 1 summarizes the sample. For practical reasons, given the number of reports analyzed, the data presented in this table are grouped by companies and/or subsidiaries.[2] The present study focuses on GRI reports and includes all the possible application levels of this framework. These application levels[3] (A+, A, B+, B, C+, C) depend on the completeness of the report and the existence of a certification or assurance process. Application levels were not used for sample selection because they are not necessarily related to the impacts on biodiversity and actions in this area.

Data Analysis

Data analysis was based on a qualitative content analysis process, which can be defined as a ‘‘research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns’’ (Hsieh and Shannon 2005, p. 1278). The use of the qualitative analysis software QDA Miner (Version 4.0.4) facilitated the systematic classification of data, notably the information storage, coding, and comparison. This software also made it easier and more flexible to explore recurring themes, notably those related to the techniques of neutralization. Although it is not suitable for statistical analysis, the use of this type of software can produce some relevant quantitative data, such as the overall volume of information coded for specific categories of information

[1] The format, information and Internet address of this list have changed overtime. Currently, the list can be obtained at http:// database.globalreporting.org/search (consulted in April 2013). With few exceptions of reports only available online, most documents of the sample were in PDF format.

[2] It is worth noting that companies do not necessarily produce a GRI report every year and that parent companies may have several subsidiaries, each of which may produce a specific sustainability report or fail to do so, and apply the GRI framework or not.

[3] Application levels have been removed in the new G4 version.

or different periods of time. This analysis made it possible to estimate the proportion of reports dedicated to biodiversity issues and its evolution over time. The data analysis process was essentially based on five steps.

Table 1 Reports analyzed and information on biodiversity

Organizations analyzed	Reference years of the reports	Application levels	Reports number of pages	% on Biodiversity
African Rainbow Minerals	2008, 2009, 2010	C, C, A?	56, 56, 90	4.19; 5.24; 7.65
Agnico Eagle Mines	2009, 2010	X, A?	80, 106	2.18; 1. 57
Anglo American PLC	2008, 2009, 2010	A?, A?, A?	76, 53, 74	5.2; 8.13; 7.5
Anglo Platinum	2009, 2010	A?, A?	147, 164	2.20; 4.95; 5.61
Anglo Gold Ashanti	2008, 2009, 2010	A?, A?, A?	243, 64, 64	2.78; 1.82
Antofagasta PLC	2008, 2009, 2010	C, B, A	79, 116, 86	2.20; 4.95; 5.61
Aquarius Platinum	2010	C	83	5.07
Assore	2010	X	148	0.53
Barrick Gold	2009, 2010	A?, A?	73, 80	6.95; 6.39
Bendigo Mining	2010	C	16	3.45
BHP Billiton	2008, 2010	A?, A?	26, 54	8.70; 5.66
Cliffs Natural Resources	2008, 2009	B?, B?	52, 62	6.78; 4.44
Codelco	2010	A?	208	1.4
CompaniaMinera Dona	2010	A?	197	5.6
De Beers Canada	2009, 2010	C?, A	44, 101	5.04; 2.44
De Beers Group	2008, 2009, 2010	A?, A?, A?	108, 112, 101	7.2; 6.9; 3.84
DRD Gold	2008, 2009, 2010	C, C, C	56, 60, 56	6.73; 4; 1.86
Eastern Platinum	2010	B	58	2.06
Evraz	2010	C	289	1.03
Exxaro	2008, 2009, 2010	B?, B?, B?	57, 282, 320	5.22; 3.62; 1.67
Fairmount Minerals	2008, 2010	A, A	40, 74	5.69; 3.66
Fortescue Metal Group	2009, 2010	X, X	28, 30	14.6; 18.37
Freeport Macmoran Copper	2008, 2009, 2010	X, X, A?	76, 46, 85	3.99; 34.25; 3.53
Gammon Gold	2009	B	56	4.91
Gem Diamonds	2008, 2009, 2010	X, X, X	7, 112, 28	4.41; 2.39; 5.93
Glencore International	2010	A	106	2.3
Gold Fields	2008, 2009, 2010	B?, B?	38, 235	2.65; 1.97; 13.99
Grupo Mexico	2008, 2009, 2010	B, A?, A?	155, 94, 96	5.61; 4.96; 7.81
Harmony Gold Mining	2008, 2009	B?, B?	76, 92	2.38; 3.08
Hudbay Minerals	2008, 2009, 2010	B, B, B	36, 48, 54	8.04; 12.62; 5.83
Iamgold	2009, 2010	C, B	21, 56	5.16; 8.64
Imerys	2008, 2009, 2010	X, X, X	13, 32, 16	2; 4.57; 4.49
Implats	2008, 2009	B?, B?	88, 180	3.78; 1.77
Inmet Mining	2008, 2009, 2010	B, B?, B?	88, 78, 62	2.19; 6.53; 8.31
Kingsgate	2008, 2009	A, A	14, 10	7.21; 3.88
Kinross Gold	2009	A	68	3.62
Kumba Iron Ore	2008, 2009, 2010	C?, C?, C?	38, 77, 72	3.2; 4.41; 4.01
Lihir Gold	2009	A?	128	4.7
Lonmin	2008, 2009, 2010	B?, B?, A?	117, 103, 119	3.58; 2.82; 3.5
Merafe Resources	2008, 2009	B?, B?	122, 64	1.18; 4.25
MineraAlumbrera	2009	A	76	3.94
MSPL	2009–2008, 2010	A?, A?	76, 112	3.74; 1.33
Newcrest Mining	2008, 2010–2009	A?, A?	78, 78	11.23; 10.82
Newmont Australia	2008	X	84	2.04
Nippon Mining	2009, 2010	A?, A?	112, 108	3.66; 0.69
NorthamPlatinum	2008, 2009, 2010	C, C?, B?	36, 41, 58	2.01; 10.39; 4.22
Novagold	2009, 2010	C, B	52, 80	2.13; 0.52
OJSC MMC Norilsk Nickel	2008, 2009, 2010	A, X, A	148, 157, 144	2.2; 3.59; 1.57

Organizations analyzed	Reference years of the reports	Application levels	Reports number of pages	% on Biodiversity
Osisko	2008, 2009	X, C	36, 33	3.33; 1.88
OZ Minerals	2008, 2009, 2010	B?, B, B?	83, 41, 45	2.82; 2.21; 3.43
Panoramic Resources	2008, 2009	B, B	46, 54	7.24; 5.14
Penoles	2009	A?	85	4.96
PT Kaltim Prima Coal	2009, 2010	A?, A?	104, 94	4.84; 4.37
Rio Tinto	2008, 2009, 2010	A?, A?, A?	10, 40, 13	8; 2.99; 9.17
Royal Bafokeng Platinum	2010	B?	178	0.49
S and B Industrial Minerals	2008, 2009, 2010	B, B, B	56, 72, 56	11.03; 4.15; 8.59
SUEK	2010	C	71	2.14
Sumitomo Metal Mining	2009, 2010	B?, A?	68, 70	4.45; 5.38
Teck Resources	2008, 2010	A, A?	20, 94	13.03; 6.81
Vale	2008, 2009, 2010	B?, A?, A?	117, 134, 137	7.91; 6.5; 8.43
Vedanta Resources	2008, 2010	X, B?	80, 40	3.27; 1.61
Xstrata Coal Australia	2009, 2010	B, B	50, 76	5.79; 5.62
Xstrata Coal South Africa	2009	B?	120	6.99
Xstrata Copper North Chile	2009	X	68	3.38
Xstrata Copper North Queensland	2009	A	116	2.28
Xstrata Copper San Juan	2009, 2010	B, B	60, 56	4.03; 3.13
Xstrata Copper Southern Peru	2009, 2010	A, A	70, 80	0.84; 4.56
Xstrata Copper Tampakan	2009	X	48	5.86
Xstrata Frieda River	2009, 2010	B, B	36, 40	7.94; 6.53
Xstrata Mount Isa Mines	2009	A	64	9.94
Xstrata South Africa	2010	A?	188	3.59
Xstrata Zinc Australia	2009, 2010	B, B	54, 52	12; 5.85
Xstrata	2010	A?	136	3.2
Yamana Gold	2008, 2009, 2010	C, C, C	60, 54, 68	0.97; 1.28; 5.05

In the first step, the information on biodiversity issues was extracted from the GRI reports and saved in a specific file for each report. The use of key words such as biodiversity, biological diversity, EN11, EN12, EN13, EN14, and EN15 facilitated the identification of relevant information, which was sometimes scattered throughout rather lengthy reports. All in all, the passages on biodiversity collected from reports represented the equivalent of around 560 pages.[4]

In the second step, a categorization framework for data classification was developed. This framework was initially based on a few preliminary categories, related in particular to the GRI indicators, impression management, and neutralization techniques. Each category was clearly defined and described in detail in order to be used in the same manner, regardless of the person conducting the data analysis.

In the third step, the categorization framework was used to code and organize the information on biodiversity extracted from the GRI reports. This coding process required a constant adaptation of the categorization framework to the type of information collected through the creation, merging, or subdivision of codes. Most categories were therefore not determined arbitrarily at the outset, but emerged from the reports analyzed or from ideas and concepts that could be clearly related to the data collected. This inductive process of data

[4] This estimation is based on single-space text and does not take into account the images inserted in the reports.

categorization is similar to the grounded theory approach, which is generally used for qualitative studies (Strauss and Corbin 1990; Kohlbacher 2005). In order to limit the bias related to different interpretations of data and categories, the coding process was carried out independently by two coders. At the end of this process, 2,985 passages on biodiversity issues were coded according to 114 categories and sub-categories.

In the fourth step, the data coded in the different categories by the two coders were analyzed, compared, and discussed in the light of the objectives of the study. Most of the time, the interpretation and use of the categorization framework by the two coders appeared highly convergent. To reduce the number of sub-categories created during the coding process, some of them were merged and/or renamed at this stage to facilitate the data analysis.

In the last step of the analysis, the main categories used for this study were interpreted and, as far as possible, the relative importance of certain trends was evaluated. Representative quotes were also identified at this stage to illustrate the main results of the study,[5] in line with its objectives, notably:

- The manner in which the negative impacts of mining activities are explained and legitimized through the use of various techniques of neutralization. This issue was analyzed through 4 main categories that emerged from data analysis: claim of a net positive or neutral impact, denial of significant impacts, distancing from the reported impacts, and dilution of responsibilities;
- The manner in which organizations give an account of biodiversity issues in general and their commitment to it. The information collected on this issue was analyzed through 3 main categories that emerged from data analysis: emphasis on the seriousness of biodiversity issues, corporate commitment in this area, and problems with the measurement and comparison of performance. These categories shed more light on the reasons underlying the techniques of neutralization used in biodiversity reporting.

The following two sections of the result analysis are structured around these two objectives, which also cover the main GRI indicators on biodiversity (impacts on biodiversity and organization commitment).

Reporting the Impacts on Biodiversity Through Techniques of Neutralization

Modeling the Justifications of Biodiversity Impacts

The GRI framework requires organizations to describe significant impacts on biodiversity, notably through the EN12 indicator (significant impact of activities on biodiversity). The use of techniques of neutralization appears to be a compromise between, on the one hand, the requirement to report - for credibility and compliance reasons - on the impacts on

[5] For practical reasons, the source of these representative quotes is indicated according to the reference year of the report and not its date of publication.

biodiversity, and, on the other hand, the need to preserve organizational legitimacy through socially acceptable arguments. The techniques of neutralization used in sustainability reports to justify biodiversity issues can be grouped into four categories that emerged through the data analysis: claim of a net positive or neutral impact on biodiversity, denial of significant impacts, distancing from the impacts, and dilution of responsibilities. These techniques of neutralization are not necessarily mutually exclusive and can be combined. They can be organized according to the two dimensions underlying the techniques of neutralization:

- The way to describe - or deny - the existence of negative impacts or issues: certain techniques of neutralization (denial of significant impacts, claim of a net positive or neutral impact) deny or do not explicitly recognize significant impacts on biodiversity, while others (dilution of responsibilities, distancing from the reported impacts) indirectly recognize them without compromising corporate legitimacy;
- The justification of those impacts or issues: certain techniques of neutralization (claim of a net positive or neutral impact, dilution of responsibilities) are based on the promotion of organizational excellence, responsiveness, and exemplification, while others (denial of significant impact, distancing from the reported impacts) are focused on the minimization of reported impacts.

The relationships between these two main dimensions can be used to model the techniques of neutralization used in biodiversity reporting (see Fig. 1).

Claim of a Net Positive or Neutral Impact

The most positive and optimistic technique of neutralization used to rationalize biodiversity issues is based on the self-proclamation of corporate excellence and the claim that the negative impacts on biodiversity are non-existent or have been neutralized (see Fig. 1). This technique is generally associated with offsetting practices. As highlighted by Tregidga (2013, p. 809), offsetting ‘‘allows the developments that sacrifice biodiversity or conservation in one area to go ahead by allowing the developer to increase biodiversity or conservation outcomes in another area.’’ Nevertheless, the reports analyzed are essentially focused on the efforts to increase biodiversity in specific areas and/ or the net contribution of the organization. Conversely, the negative impacts in other areas are clearly overlooked, which allows organizations to put the emphasis only on their environmental responsiveness and positive or neutral impact. This technique of neutralization can be based on two complementary approaches: claim of a net positive impact and neutralization of the impacts.

The first approach, adopted in 17 % of all reports, consists in arguing that, despite the potential impacts of mining activities, the organization has, globally, a net positive contribution to biodiversity. The concept of net positive impact (NPI) is often used in relation to specific mines or projects, or to the whole organization (e.g., Anglo American 2010; Gold Fields 2010; Inmet Mining 2008; Rio Tinto 2008, 2009, 2010; Teck Resource 2010). Although the NPI concept is put forward by the BBOP, very few organizations refer to this program, which is explicitly mentioned in fewer than 3 % of all reports. The NPI concept does not necessarily deny the possibility of negative impacts at certain stages of mining activities. Nevertheless, many organizations claim that these impacts are corrected and, in the

end, more than outweighed by the positive actions for biodiversity enhancement (e.g., cultivation of plants and seeds in nurseries prior to wildlife relocation, reintroduction of endangered species, land rehabilitation, and training of the local population on biodiversity protection). These positive actions tend to exemplify corporate excellence and responsiveness. This optimistic view, in which mining organizations appear as defenders of wildlife, is in line with their successful rhetoric on biodiversity commitment and it meets or even exceeds social expectations for corporate sustainability:

> *Minera Panamá is developing the Cobre Panama copper deposit in an environmentally sensitive area; however, best environmental practices will be implemented so the project will result in no net biodiversity loss. In fact, the project will result in a net gain of area conserved, enhanced or provided as offset for mine impacts. Conservation efforts will be implemented both inside and outside the project's boundaries, and studies are underway to ensure that the development does not threaten any species.* (Inmet Mining 2009, p. 38)

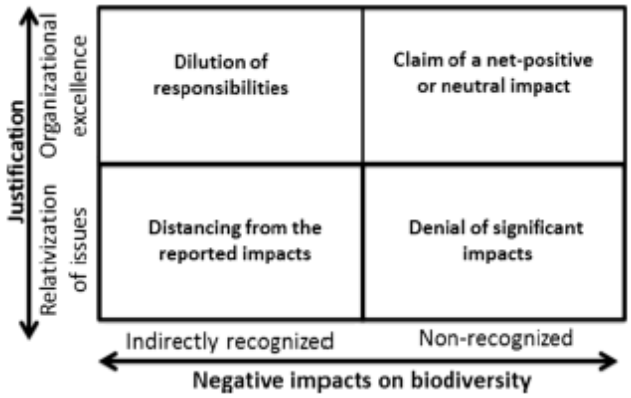

Fig. 1 Techniques of neutralization on biodiversity issues

The second approach, adopted in 11 % of all reports, consists in suggesting that the impact of mining activities on biodiversity is or will be, to a large extent, corrected or balanced. The arguments used are quite similar to the first approach (NPI) but, in this case, the biodiversity score is not presented as positive overall but rather as neutral. Moreover, certain reports in this category do not deny the possible existence of disturbance to habitats remaining after the rehabilitation efforts. Nevertheless, these impacts are presented as relatively limited and the organization claims that, in the long term, it restores the sites to close to their original state. Most of the time (e.g., Barrick Gold 2010; African Rainbow Minerals 2010; Aquarius Platinum 2010; Merafe Resources 2009), this claim is based on the life-cycle assessment of mining activities and is focused on the rehabilitation efforts in the impacted areas:

> *The Venture's aim is to ensure that while it is operating a site, and after it has closed a site, the natural environment should be able to sustain biodiversity, landscape functions and the needs of local communities. In the long term, the environment in which we have operated should be able to return to as close to its original state as possible.* (Merafe Ressources 2009, p. 52)

Denial of Significant Impacts

Another optimistic technique of neutralization, reflected in 21 % of reports, consists in denying the existence of significant impacts on biodiversity. Contrary to the claim of a net positive or neutral impact, this technique of neutralization is not based on the exemplification of corporate behavior but rather on the relativization and minimization of biodiversity issues (see Fig. 1). This position is generally based on two non-mutually exclusive arguments. First, some reports (e.g., Lonmin 2008; Antofagasta 2009; Gammon Gold 2009; Metal Group 2009) argue that their mining areas are not located in biologically sensitive areas, or that no threatened or endangered species have been identified in the vicinity of the exploitation sites. Interestingly, this argument is advanced by a relatively small proportion of reports, which confirms the importance of biodiversity issues for the vast majority of mining sites. Second, some reports (e.g., African Rainbows Minerals 2010; DeBeers Canada 2010; Antofagasta 2008; Grupo Mexico 2010) argue that their activities have not been found to cause significant impacts on biodiversity. These reports often refer to the results of various studies. Nevertheless, the absence of significant impacts is rarely well substantiated, and the fact that these impacts have apparently not been demonstrated or observed does not necessarily mean they do not exist:

> *No significant direct or indirect biodiversity impacts have been identified by independent fauna experts investigating our sites. Based on this research, none of our sites requires a biodiversity management plan.* (Lihir Gold 2009, p. 85)

> *No significant impacts have been observed on biodiversity as a result of ADASA's operations. ADASA does not have any land in or adjacent to protected areas, and its activities do not affect any protected species.* (Antofagasta 2008, p. 71)

Distancing from the Reported Impacts

Unlike the techniques of neutralization previously mentioned, distancing from the reported impacts implies the recognition, albeit indirect, of negative impacts on biodiversity (see Fig. 1). Nevertheless, these impacts are minimized and seem disconnected from current corporate activities. This distancing can be based on two main approaches: contextualizing the impacts and emphasizing the uncertainties surrounding them.

The first approach, used in 17 % of reports, consists in placing the impacts in a broader context, notably of time and space. This distancing mechanism does not necessarily lead to an evasion of responsibilities, but rather contributes to relativizing and contextualizing the magnitude of the impacts. First, some reports (e.g., Cliffs Natural Resources 2008; Harmony Gold Mining 2008; Teck Resources 2009; Vale 2010) argue that the effects on biodiversity, albeit real, must be considered in the long range and must take into account the history of land occupation, the time required for an ecosystem to recover from mining activities, and/or the progress made by mining organizations. Second, some reports (e.g., DeBeers Group 2008; Newcrest Mining 2010; Hudbay Minerals 2010) stress that the proportion of the land affected by their mining activities is relatively small compared to the total landmass or to the land owned by the organization, which is often claimed to be used as natural reserve:

> *The Minerals Council of Australia has calculated that 0.01 % of Australia's landmass is directly affected by mining activities.* (Newcrest Mining 2010, p. 33)

> *More than 185,000 ha of our owned and managed property is set aside as nature reserves. This contrasts significantly with the 36,620 ha (3.8 %) of our 958,338 ha mining license areas disturbed by mining activities.* (DeBeers Group 2008, p. 86)

The second approach, which is used in 21 % of reports, is focused on the uncertainties surrounding impacts on biodiversity and the legality of corporate operations. This approach allows organizations to recognize negative impacts to a certain extent, while distancing themselves from responsibilities for these impacts and unethical behaviors. First, the recognition of impacts is often expressed in conditional terms and is therefore not a clear admission of guilt: 'there may be significant impacts' (Barrick Gold 2009, p. 17); 'activities can have significant impacts' (DeBeers Group 2009, p. 92); 'impacts may arise' (Anglo American 2009, p. 29; Kumba Iron Ore 2009, p. 60), and so on. Furthermore, this recognition generally concerns a specific mining area and does not apply to the company as a whole. Moreover, these impacts are generally claimed to be in accordance with the legislative and the environmental requirements: ''Facilities producing direct or indirect negative impacts on the environment in mines and open pits of the Company are carried out in accordance with environmental requirements'' (Suek 2010, p. 81)

Dilution of Responsibilities

The last technique of neutralization observed, the dilution of responsibilities, is adopted in 18 % of reports (see Fig. 1). Unlike the technique of neutralization discussed above (distancing from the reporting impacts), this rationalization focuses on the role of other actors and circumstances, rather than on the minimization of negative outcomes. The dilution of responsibilities allows organizations to portray themselves as impeccable or even exemplary and therefore to deflect attention from the biodiversity issues related to corporate activities. This exemplification does not directly deny that certain negative impacts on biodiversity may occur. Nevertheless, the responsibilities for these impacts are described as being beyond managerial control and are therefore not associated with corporate activities. Biodiversity impacts are instead diluted between various actors and circumstances, including the activities of the mining sector in general, the increasing market demand, and the occurrence of uncontrolled incidents. First, various reports (e.g., PT Kaltim Prima Coal 2009; Glencore International 2010; Teck Resources 2009) recognize the disturbances of natural habitats that mining activities in general cause or may cause, but they remain relatively evasive with regard to the specific contributions of the organization itself, which tend to be presented as exemplary. For example, the report of Xstrata (2010, p. 58) explains that, ''inherently, mining activities can affect local ecology, but we strive to avoid any impact on natural habitats'' (p. 58). Second, the impacts on biodiversity are presented as the normal consequence of the ''growing human population'' and ''rising demand for the earth's resources,'' which results in ''increasing pressures on ecosystems and biodiversity'' (Teck Resources 2010, p. 48). This growth, and the demand for more diversified materials, also increases the competition for natural resources between mining firms, which increasingly have to operate in sensitive ecosystems to meet the needs of the market. Finally, the possible impacts on biodiversity are sometimes associated with uncontrollable incidents (e.g., Barrick Gold 2009; Fortescue Metal Group 2009; Antofagasta 2010). The information released on these incidents, however, can

be used to highlight the ethical concerns of the organization and/or the responsibility of other actors:

> *Various accidents on the road within and adjacent to our Pilbara operations have left kangaroo joeys orphaned. Our team has rescued these joeys and called on the services of the Kanyana Wildlife Rehabilitation Centre near Perth for assistance with rehabilitation and release.* (Fortescue Metal Group 2009, p. 20)

> *The environmental concern of our company is also reflected in our search to reduce the number of operative accidents that require soil remediation due to substances spilled, through the implementation of greater controls and guarantees of compliance on contracting transporter companies for hazardous materials and waste.* (Grupo Mexico, 2008, p. 45)

Dramatizing Corporate Commitment for Biodiversity

Emphasizing the Seriousness of Biodiversity Issues

Biodiversity reporting is not only based on the use of techniques of neutralization to legitimize negative impacts or issues which could threaten corporate image. Most reports also recognize the seriousness of biodiversity issues in general and the necessity of substantial action. As a result, explanations of organizations' commitment are often dramatized through images and statements emphasizing the importance of protecting natural habitats to sustain life on earth. The images in the reports often depict unspoiled nature and biodiversity: trees, endangered species, and rivers. Such dramatizations of biodiversity issues certainly influence the perceptions of stakeholders, but they do not constitute a clear commitment in this area. The same remark applies to the many general statements on the vital importance of preserving biodiversity. The following quote is representative of these statements:

> *The importance of biodiversity protection and conservation is rooted in the recognition that ecological processes are the foundations for life. Biodiversity rich habitats provide us with food, protection, goods, materials, among other ecosystem services.* (Codelco 2010, p. 113)

Although this type of statement suggests that companies are really concerned by biodiversity issues and are therefore committed to conservation, it may act as a smoke screen to hide the lack of substantial actions on the part of the company. The emphasis on the seriousness of biodiversity issues is indeed based on rhetoric rather than accounts of actual practices and performance. This emphasis also reinforces the need to be consistent, through the techniques of neutralization, with social expectations concerning biodiversity. Nevertheless, the proliferation of general statements and self-justifications on biodiversity are detrimental to corporate accountability, given that the space given to environmental issues in the reports is quite limited. The contrast between the information on biodiversity extracted from the reports and the length of the reports made it possible to estimate that biodiversity reporting accounts, on average, for around 5 % of the global information disclosed in terms of the number of words (see Table 1). Given the seriousness and complexity of biodiversity - which are recognized by most companies - its relative importance in the GRI reports seems weak. In fact, this information generally represents around 3–4 pages of an average report, but none of

them completely omit this issue. Nevertheless, the space given to biodiversity is quite variable depending on the organization. For example, more than 30 % of the 2009 Report by Freeport McMoRan Co is devoted to biodiversity issues. Conversely, six organizations devote 1 % of their reports to biodiversity. Despite the common opinion about the increasing importance of biodiversity for organizations (Bonini and Oppeinheim 2010; GRI 2007; Jones and Solomon 2013), the space given to this issue in the GRI reports does not appear to have risen. On average, this topic accounted for 4.5 % of the reports in 2008, 5.3 % in 2009, and 4.6 % in 2010. Therefore, though the United Nations declared 2010 to be the International Year of Biodiversity, organizations do not seem to accord more importance to this issue.

Interestingly, we found no clear connection between the GRI application levels and the information disclosed on biodiversity: in A+ reports, 5.5 % of the content was devoted to biodiversity; in A reports, 4.5 %; in B+ reports, 3.8 %; in B reports, 6 %; in C+ reports, 5.4 %; and in C reports, 3 %. This result seems to contradict the requirements of completeness associated with the higher application levels (GRI 2006). Indeed, in contrast to the A application level, B and C reports are not required to release information on biodiversity, and yet, they often release more information on this issue than A reports do. This finding may reflect the relevance of biodiversity issues, which are relevant to the mining sector in general, whatever the level of application of the GRI framework. Nevertheless, the GRI G3.1 framework contains 79 indicators (92 with the mining sector supplement), and many of them cover material issues beyond biodiversity. The lack of a relationship between application levels and biodiversity reporting may therefore reflect the use of impression management strategies disconnected from the GRI requirements. From this more critical perspective, whether or not organizations are required to report thoroughly on biodiversity, this issue may appear to be a convenient tool for enhancing corporate image through the release of general information and techniques of neutralization that are not necessarily related to the mining activities and their environmental impact.

Legitimizing Corporate Commitment Through an Optimistic Rhetoric

The recognition of the risks to biodiversity is generally associated with reassuring statements on the effective commitment of mining organizations in this area and explanations of the actions implemented. These explanations are at the center of the concept of accountability which requires a justification of the actions implemented to address issues for which the organization is accountable. Nevertheless, statements on corporate commitment to biodiversity rarely mention the real or potential impacts on biodiversity that need to be addressed. Rather, these statements remain essentially focused on a successful and optimistic rhetoric highlighting the positive contribution of the organization in ‘‘protecting and enhancing biodiversity’’ (Gammon Gold 2009, p. 26), ‘‘active stewardship of biodiversity in all phases of its activity’’ (Anglo American 2008, p. 54), ‘‘actively enhancing our contribution to biodiversity’’ (Barrick Gold 2009, p. 38), ‘‘respecting and valuing all designated protected areas’’ (Lonmin 2010, p. 61), and so on. From this optimistic perspective, mining organizations present themselves as enthusiastic promoters of biodiversity conservation. Such an ambitious ideal encourages the use of techniques of neutralization to reduce the discrepancy between the self-proclaimed sustainability of the organization and the real or alleged existence of negative impacts on biodiversity.

Nevertheless, achieving sustainability and preserving biodiversity require substantial measures, which are rarely detailed in the reports analyzed. The actions for biodiversity are often described in general terms and as a partnership with other organizations: governmental agencies, universities, NGOs specializing in natural conservation, independent experts, and representatives of nature parks, among others. Such a partnership makes it possible to increase the legitimacy of biodiversity programs and acquire specific competencies that are not necessarily available inside the mining companies. For example, Anglo American highlights its successful partnership with Flora and Fauna International (FFI) on various conservation projects:

> *The results of the partnership with FFI have exceeded its original objectives. FFI believes that Anglo American has deepened its understanding of biodiversity and has benefited through the sharing of related knowledge across the Group.* (Anglo American, 2008, p. 55).

Accounting for the Unaccountable

Accounting for biodiversity requires not only explanations of one's commitment and the actions implemented, but also of the possibility of measuring or estimating the performance in this area. Although we attempted to compare the information released in each report in order to estimate the greenest or most advanced organizations with regard to biodiversity management, such a comparison was impossible for four main reasons: the qualitative nature of biodiversity issues, the context dependency of information, the absence of clear objectives, and the highly technical aspects of conservation initiatives.

First, the released information on biodiversity is essentially based on qualitative aspects: listing of endangered species, analysis of ecological habitats, rehabilitation of disturbed sites, reforestation operations, reestablishment of ground cover and tree species, and so on. Whatever its relevance and reliability, this qualitative information can hardly be translated into comparable indicators of performance. Although some GRI indicators, such as the number of endangered species (EN 15) and location and size of land owned in or adjacent to protected areas (EN11), require quantitative data, it would be nonsensical to use such information as a measurement of performance. Second, the meaning and relative importance of biodiversity issues depends on various contextual aspects which can hardly be measured and compared: geographical specificities, variety of species and habitats, vulnerability of ecosystems to specific activities or contaminants released, local regulations, history of land occupation, and knowledge of local flora and fauna. Moreover, the information on these contextual aspects is often incomplete and its reliability remains uncertain. Third, in the absence of clear objectives for maintaining or improving biodiversity, it seems impossible to determine if progress has been made over time or if the situation is deteriorating. As previously mentioned, commitment in this area remains rather general. Likewise, measures for the monitoring and verification of biodiversity actions are unclear. Fourth, biodiversity management can be quite technical, based on specialized vocabulary, and therefore difficult to decipher for non-specialists. As a result, even assuming that the information disclosed is transparent and reliable, it is not necessarily exploitable or understandable by stakeholders concerned with the assessment of actions and performance.

These limitations to the measurability and comparability of the information disclosed facilitate the use of techniques of neutralization to justify biodiversity impacts. Indeed, in the absence of clear indicators to measure performance, accounting for biodiversity is not transparent and can easily be obscured by a legitimation rhetoric based on socially acceptable arguments disconnected from real impacts. Generally speaking, the lack of measurability of biodiversity issues undermines corporate accountability whatever the amount of information released. As a result, paradoxically, the release of more detailed information does not necessarily lead to more transparency, readability, and reliability of biodiversity disclosure. In fact, some reports release rather detailed information on biodiversity issues. For example, the Fortescue Metal Group report (2010) describes quite precisely 18 endangered local fauna species as well as the programs implemented for biodiversity monitoring, site rehabilitation, and employee training. The report also describes, in the form of case studies, three research projects on biodiversity. Similarly, the Gold Fields report (2010) discloses information on land management, environmental incidents, evaluation of biodiversity risks, projects to protect or restore biodiversity, and the long-term environmental obligations of the organization. Although the information disclosed is more detailed than in most of the other reports analyzed, it is too different in nature and context-dependent to be reasonably compared. As a result, it is not possible to determine whether organizations are really accountable for biodiversity, and the quantity of information released is not necessarily indicative of real achievements. Interestingly, about 5 % of the reports analyzed, most of them from 2010, refer to the development of internal indicators to measure biodiversity issues. Although the information disclosed on these indicators remains too vague to speculate on its usefulness, it certainly reflects a more fundamental questioning of the meaning of biodiversity management:

> *During 2010, the main objective of this Group was to understand what is really meant by biodiversity protection and how the extractive sector could contribute through development of appropriate, simple and meaningful Key Performance Indicators, in line with other standards (GRI, CSI etc.).* (S and B 2010, p. 20)

> *We are developing the necessary indicators to measure our performance in biodiversity conservation. These indicators will reflect the unique circumstances in the countries where we operate as well as the fact that our activities are carried out in various ecosystems and in areas with different environmental conditions, in terms of the history of occupation land of land use.* (Vale 2009, p. 104)

Discussion

The results of this study show that sustainability reports do not represent a reliable tool for reinforcing the biodiversity accountability of mining organizations. As highlighted by Bansal and Kistruck (2006), the opacity and uncertainty surrounding environmental issues seem to incite organizations to make only symbolic commitment and focus on impression management rather than substance. Similarly, our study suggests that in the absence of clear and comparable accounts concerning biodiversity issues, disclosure in this area essentially focuses on successful rhetoric intended to positively influence the stakeholders' impressions, rather than improve transparency through the release of balanced information covering both

positive and negative aspects. This successful rhetoric is reflected in the use of techniques of neutralization and optimistic statements on corporate commitment to biodiversity. These statements are essentially based on symbolic management and self-justification rather than substantial changes (Milne et al. 2009; Milne and Gray 2013; Milne et al. 2006; Ashforth and Gibbs 1990). As highlighted by Milne et al. (2006), sustainability reporting can be described metaphorically as a journey in which business discourse ‘‘appears less concerned with an ultimate destination than with a journey to somewhere relatively undefined’’ (p. 802). In the absence of clear objectives and reliable accountability mechanisms regarding biodiversity, this journey is characterized by a reassuring rhetoric and techniques of neutralization promoting corporate greening without questioning the business-as-usual model.

Contributions to the Literature

First, this paper contributes to the literature on sustainability accounting, which has largely ignored biodiversity issues and essentially focused on the very broad and eclectic concept of sustainability (Unerman et al. 2007; Gray 2010; Cho et al. 2010, 2012). Focusing on more specific, yet essential, aspects such as biodiversity protection could contribute to addressing criticisms of the excessively broad and unspecific nature of sustainability (Moneva et al. 2006; Gray 2010; Springett 2003; Boiral 2013). Nevertheless, this study shows that biodiversity issues, while more specific than sustainability in general, may also be too broad and complex to be rigorously accounted for. This finding echoes that of Tregidga (2013) on the difficulties of measuring and quantifying biodiversity impacts and which questions the accounting and offsetting practices in this area. Although this difficulty is recognized by some reports, it is ignored by most organizations, notably those claiming a net positive or neutral impact.

Second, the study contributes to the literature on impression management tactics and techniques of neutralization. Most of this literature has focused on the individual level (Bolino et al. 2008; Lim 2002). With a few exceptions (Solomon et al. 2013; Bansal and Kistruck 2006; Bansal and Clelland 2004; Talbot and Boiral 2014), this approach has not been used to analyze the manner in which organizations legitimize their contribution to sustainability. As a result, although many studies have criticized organizations' symbolic commitment to sustainability, their focus on image improvement, and the emphasis on a positive rhetoric (Laufer 2003; Cho et al. 2010; Unerman et al. 2007; Gray 2010; Boiral 2007; Springett 2003), they have overlooked the manner in which negative impacts are rationalized and explained to stakeholders. The present study shows that mining organizations essentially use four non-mutually exclusive techniques of neutralization to legitimize the release of information which is potentially detrimental to their image: claim of a net positive or neutral impact, denial of significant impacts, distancing from the reported impacts, and dilution of responsibilities. The model proposed (see Fig. 1) provides a typology and a holistic view of the main techniques of neutralization observed in this study. This type of model has not been developed before, to our knowledge, in the literature on techniques of neutralization and impression management strategies used by organizations. Because it is based on the two main dimensions of the techniques of neutralization, namely the occurrence of negative or illegitimate issues and their justification, the model proposed can be used to analyze various types of techniques of neutralization in different contexts.

Third, this study contributes to the nascent literature on biodiversity accounting and addresses the call for more research in this area, notably on communication issues (Jones and Solomon 2013). The longitudinal analysis of the volume of information disclosed on biodiversity questions the assumption that this issue is becoming increasingly important for organizations, at least in the case of the mining sector (GRI 2007; Jones and Solomon 2013; Jones 2003; Rimmel and Jonäll 2013; van Liempd and Busch 2013). Although biodiversity is clearly a relevant issue for mining companies (e.g., Kitula 2006; Azapagic 2004), the information released on this issue is very limited and many recent reports are not necessarily very detailed or substantial. Nevertheless, the results of the study also undermine the assumption that, with the current state of reporting practices, disclosing more information on biodiversity is necessarily better and will actually lead to greater accountability. In fact, as shown by Rutherford (2003), the release of complex and unclear information can be used as an impression management strategy intended to obscure poor performance; this undermines corporate accountability. In the absence of clear indicators to measure performance or achievements in biodiversity, organizations remain largely unaccountable, and releasing more information in this area could even lead to more confusion and greenwashing. In this perspective, the current research on the development of accounting methods for biodiversity (e.g., Jones and Solomon 2013; Jones 1996, 2003; Houdet et al. 2012; Tregidga 2013) seems essential in order to improve, in the long run, organizations' accountability and transparency.

Implications and Avenues for Future Research

This study has practical implications for stakeholders and managers alike.

First, the techniques of neutralization identified can help stakeholders develop a more critical view of biodiversity reporting and sustainability reports in general. Since these techniques are repeatedly employed by organizations to manage impressions, stakeholders should be able to identify and understand these techniques in order to be less dependent on the rhetoric used to influence them. Nevertheless, the conclusions of this study are based on a limited sample of 148 reports from the mining sector. More research is needed to better understand the techniques of neutralization used to disclose information on other sustainability issues, such as greenhouse gas emissions or corruption. Generally speaking, analyzing the manner in which organizations legitimize or explain their negative impacts or the deterioration of their performance on specific indicators is a promising avenue for research which remains almost unexplored. The four techniques of neutralization identified in this study are not necessarily specific to biodiversity and could therefore be used to analyze the disclosure of information on other types of issues. Such research could also focus on different sectors of activity in order to shed more light on the institutionalization of specific statements and the general rhetoric used, in specific sectors, to release information on potentially negative issues. This type of study could also lead to discovering new techniques of neutralization and contribute to painting a more comprehensive picture of the impression management tactics used to promote corporate sustainability among stakeholders.

Second, the results of this study could be of interest to managers who are concerned with the techniques used by other organizations to explain the occurrence of negative impacts to

stakeholders. Nevertheless, the techniques observed cannot be considered as models to emulate and may even raise ethical issues concerning the requirements of transparency, relevance, and balance underlying sustainability reports (GRI 2006). Moreover, as highlighted by Ashforth and Gibbs (1990), the use of symbolic practices to increase corporate legitimacy can lead to unexpected and undesirable results by increasing skepticism and undermining credibility. Future research could analyze whether the techniques of neutralization observed are efficient and perceived as legitimate by stakeholders. For example, to what extent are the statements on the net positive impact of mining organizations and the absence of impacts credible in the eyes of stakeholders? Is the recognition of the organization's responsibility for certain biodiversity impacts really detrimental to corporate image and social legitimacy? Future research could explore these unanswered questions by focusing on the perceptions of the credibility and legitimacy of different techniques of neutralization among key stakeholders, such as the managers of socially responsible funds or environmental NGOs.

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