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From the Big Five to the Big Four? Exploring Extinction Accounting for the Rhinoceros

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1. Introduction

Accounting is more than a mere technical methodology for accumulating data and facilitating 'neutral' representations of financial position and performance. By altering what is made visible, it has the potential to encourage change at the social, organisational and individual level (for example, see Hoskin and Macve, 1986; Hopwood, 1987; Miller and O'Leary, 1987). This has been demonstrated in a management accounting context where accounting systems are designed to monitor, organise and correct business processes (Mennicken and Miller, 2012) and in the financial reporting space where technical reporting prescriptions are used to enhance the quality of financial statements (van Zijl and Maroun, 2016). Of particular importance for this paper, are developments in environmental reporting.

The last twenty years have witnessed an exponential increase in the extent of environmental, social and governance (ESG) disclosures being included in annual and, later, integrated reports (Solomon and Maroun, 2012; Hughen et al, 2014). According to the International Integrated Reporting Council (IIRC) and the Global Reporting Initiative (GRI), this signals a shift from conventional reporting models focused exclusively on financial performance to a more comprehensive review of how organisations create value while ensuring long-term sustainability (see also Atkins and Maroun, 2015; King, 2016). Critical theorists have, however, challenged the change-potential of the sustainability reporting movement (Milne et al, 2009; Tregidga, 2013). They argue that ESG reporting may offer a glimpse of an improved socio-economic state but, ultimately, relies on a financial discourse and accountancy's calculative infrastructure to legitimise unsustainable business practices, deflect corporate criticisms and resist the need for meaningful reform of the capitalist system (Solomon et al, 2013; Tregidga et al, 2014; Zadek et al, 2015). In this context, most of the research which deals with accounting as a social construction adopts a negative perspective which presents ESG reporting as a response to the hegemonic threat posed by the demand for *real* sustainable development. This paper challenges this position.

Undoubtedly, some corporations will use non-financial disclosures to manage impressions and reframe the sustainability debate to conceal unsustainable business models and maintain the status quo. It is, however, premature to conclude that ESG reporting by *all* organisations should be interpreted as the result of negative hegemonic forces (see Gallhofer and Haslam, 2003). While there are limitations, the vocabulary of non-financial reporting has widened the scope of the corporate reporting function, created new areas of organisational accountability and driven an awareness of the need for sustainable business practice (Gray et al, 1995; Adams and Frost, 2008; Higgins and Walker, 2012). This is especially evident when considering efforts at accounting for biodiversity (as a specific example of non-financial reporting) (Jones and Solomon, 2013; Rimmel and Jonäll, 2013).

Both anthropocentric and deep ecological studies of biodiversity reporting confirm the ability (even if theoretical) of this form of accounting to contribute to an ecological or a sustainability discourse and encourage corporate change (Jones and Solomon, 2013; Rimmel and Jonäll, 2013; Samkin et al, 2014). While financial paradigms continue to characterise most corporate reporting initiatives (Tregidga et al, 2014), given sufficient time, emerging forms of ESG reporting (including narrative and biodiversity reporting) can alter perceptions and lead to the creation of a better world (Pearce, 2007; Atkins et al, 2015). We demonstrate this transformative or emancipatory potential by examining disclosures dealing specifically with the plight of South Africa's rhinoceroses provided by some of the largest companies listed on the Johannesburg Stock Exchange (JSE). A social constructionist framing of 'accounting' is used to develop interpretively the outlines of an extinction accounting framework. This moves beyond the traditional views of the philanthropic accounting and impression management literature (see Solomon et al, 2013; Zadek et al, 2015) and reveals a sincere effort to protect one of Africa's iconic 'Big Five[1]' which is being threatened by habitat destruction, climate change and a severe poaching problem.

An interpretive text analysis of disclosures in companies' integrated reports and sustainability reports and on their webpages suggests deeply-held beliefs in a need for ethical behaviour, a genuine concern for rhino conservation and protection and a range of corporate strategies aimed at reversing the rhinoceros' trend towards extinction. Often, these 'accounts' include details on

[1] The 'Big Five' is a term coined by hunters to describe the five most difficult animals to hunt (on foot) in Africa. These are: buffalo, elephant, leopard, lion and rhinoceros.

the efforts of environmental/conservation groups (such as RAGE[2]) and how these companies are taking it upon themselves to commit funds to anti-poaching initiatives and encourage awareness of rhinoceros conservation and protection. Corporate reporting on the plight of the rhinoceros suggests that 'extinction' is no longer limited to the domain of ecologists. The harsh reality of losing one of Africa's Big Five coincides with a never-before-seen response from leading South African corporations. Accounts of rhinoceros conservation (which is not *directly* linked to these organisations' primary *business* objectives) imply that corporate discourses are evolving and organisations' boundaries are expanding in reaction to the possible loss of this species (see Llewellyn, 1994; Gray et al, 1995). More specifically, 'extinction' is emerging as a corporate (rather than solely biological/scientific) construct and an important sustainability consideration. Additional disclosure also suggests a desire to demonstrate a broad level of accountability and responsibility. In this way, extinction accounting goes a step beyond the now well-documented 'accounting for biodiversity'. The reporting is more than just descriptive, focused on compliance with specific laws, regulations or codes of best practice (Milne et al, 2009; Jones and Solomon, 2013; Cho et al, 2015) or driven by the need to secure social acceptance (Milne et al, 2009; Tregidga, 2013; Atkins et al, 2016). Companies are recognising their unique ability to affect change by devoting funds and resources to reverse extinction trends.

Consequently, an evolving 'extinction accounting framework' would not draw on impression management (Solomon et al, 2013), philanthropic accounting (Zadek et al 2015) or the relevance of isomorphic pressures (de Villiers and Alexander, 2014) to explain the emergence of rhinoceros-specific biodiversity disclosures. These non-financial accounts are seen as more than a response to social pressures for ESG reporting or a method of managing threats to an organisation's credibility (see Milne et al, 2009; Jones and Solomon, 2013; Cho et al, 2015). We are inspired by a post-modernist framing of accounting (see, *inter alia,* Gallhofer and Haslam, 2003; Adams and Frost, 2008; Dillard and Reynolds, 2008; Atkins et al, 2015) to suggest an evolving reporting schematic which is emancipatory, transformational, dialogical and motivated

[2] RAGE (Rhino Action Group Effort) was established by LeadSA, a Premedia Broadcasting and Independent Newspapers Initiative, to assist in the fight against illegal rhinoceros poaching. RAGE organises campaigns to build public awareness of issues associated with rhinoceros poaching and lobbies appropriate authorities for support. RAGE is fully supported by the South African Police and SANParks.

by concerns of heritage, culture, ethics and a fear of the consequences of extinction (see Dillard and Reynolds, 2008; Atkins et al, 2015)..

The paper is structured as follows. Section two discusses the existing literature in the areas of accounting for biodiversity focusing specifically on the requirements of the GRI. Section three provides a theoretical framework. It discusses philanthropic accounting and social constructionism as a means of interpreting corporate accounting on preventing species extinction. Section four provides a short review of the current state of rhinoceros populations in South Africa. Section five explains the research method and the findings of our interpretive content analysis are provided in section six. Section seven concludes and identifies areas for future research.

2. Reporting on biodiversity and species

Multinational companies are disclosing ever more information dealing with threatened species and efforts to protect them. This may be motivated by the GRI's call for biodiversity-related disclosures. relating to the International Union for the Conservation of Nature (IUCN) Red List Species. Specifically, GRI reporting principle G4-EN14 calls for companies to disclose information on the total number of endangered species which have habitats in areas affected by the company's operations. The disclosures should be provided by level of extinction risk[3] according to the IUCN Red List and relevant national conservation lists.

According to *the G4 Sustainability Reporting Guidelines Implementation Manual*, this disclosure practice assists the company in identifying, "…where its activities pose a threat to endangered plant and animal species". By identifying threats, it is hoped that the company can take appropriate action to avoid harm and prevent the extinction of affected species. In other words, the GRI acknowledges a direct relationship between reporting and action. It is assumed that by recording and accounting for impacts on threatened species, companies will - as a direct

[3] Categories included endangered, endangered, vulnerable, near threatened, of least concern, by the IUCN Red List

consequence of having to develop and write the disclosures - do something to avoid extinction. A review of the GRI extinction reporting guidelines, however, reveals some important limitations:

> ".... Some of the strongest critical comments provided on the GRI throughout its development have concerned its apparent reluctance to provide a definition of 'sustainability', 'sustainable development' or 'sustainability principles'" ... This has led to concerns that companies could "... sell their GRI compliant report as a sign of "sustainable behaviour"" (Milne and Gray, 2013, p.19).

In other words, it is not clear if trends of increased ESG reporting documented over the last three decades actually depict improved transparency, a greater awareness of the importance of sustainability and enhanced accountability (Milne, 2013). Instead, there is the risk that, because the

> "... GRI are insufficient conditions for organizations contributing to the sustaining of the Earth's ecology…they may reinforce business-as-usual and greater levels of un-sustainability" (Milne et al., 2013, p.13).

Consequently, measures of compliance with the GRI (or other existing biodiversity frameworks) are not necessarily indicative of an organisation's commitment to sustainability and, in particular, the management or mitigation of biodiversity loss (Atkins et al, 2014; Tregidga et al, 2014; Atkins et al, 2016; Maroun, 2016). From a critical perspective (as touched on in Section 1) an increase in the extent of biodiversity reporting can be interpreted as the mobilisation of ESG disclosures in response to social, regulatory or political pressure for more non-financial detail in corporate reports rather than a genuine commitment to sustainability (ibid). At best, sections of the integrated, annual or sustainability report which deal with issues such as habitat lost, number of species affected by an organisation's activities and different conservation initiatives are only a basic form of biodiversity reporting (GRI Principles, version 4). 'Extinction accounting' must be transformational if it is contribute to extinction prevention. Generic disclosures required by codes of best practice need to be complemented with corporate reporting which demonstrates specific policies, plans and actions being implemented to avert extinction (see Cho et al, 2015;

Atkins et al, 2016). In other words, extinction accounting is not just a GRI compliance exercise but an emancipatory form of accounting.

To examine the 'elements' of an extinction accounting framework in more detail, the prior research interpreting accounting as part of a social constructionist paradigm provides a theoretical frame of reference. This body of work is useful for explaining how corporate reporting (including corporate narrative reporting) creates new 'fields' of accountability, alters perspectives and promotes positive change (see Adams and Frost, 2008; Dillard and Reynolds, 2008). Elements of philanthropic accounting and impression management may be present (Solomon et al, 2013) but accounting is, ultimately, a socially constructed practice which can be mobilised to give an account of past performance *and* encourage an enlightened business approach which attempts to align corporate action with social imperatives (Gallhofer and Haslam, 2003; Atkins et al, 2015). To this end, Section 3 presents the theoretical framework used to outline an extinction accounting schematic. The critical research on philanthropic accounting and impression management is touched on (Section 3.1) and a contrasting emancipatory role of accounting is developed (Section 3.2). This is used to analyse disclosures found in integrated and sustainability reports and on the webpages of some of South Africa's most prominent companies (Section 6) and reveal the elements of a transformative accounting discourse emerging in response to the threat of extinction of the rhinoceros.

3: Theoretical grounds for understanding and developing an extinction accounting framework

For the purpose of this research, we differentiate between accounting for philanthropic purposes (Brown et al, 2006) and accounting as an agent of transformation in a sustainability setting (Gray et al, 1995). There may be some overlaps, particularly in the sense that an organisation's corporate social responsibility (including acts of philanthropy) can coincide with specific sustainability projects. Nevertheless, and as discussed in more detail below, philanthropic accounting seems often mobilised for the purpose of impression management. It is our positon that this is not the case for 'extinction accounting'. Extinction accounting is informed by a genuine commitment to the environment and, in the social constructionist tradition, alters corporate discourse and offers a potential for meaningful corporate action on important biodiversity issues.

3.1: Philanthropic accounting

Corporations traditionally devote spare cash flow to 'good' or philanthropic causes and provide information about such donations in their reports (referred to as philanthropic accounting). Researchers have suggested that such activities are motivated more by a desire to enhance corporate reputation rather than by genuine ethical and philanthropic concern. This type of critical and cynical approach to corporate reporting is common in the social and environmental accounting literature and is difficult to disagree with. For example, Zadek et al. (2015) argue that it is easy for companies to report on charitable programmes and philanthropic activities but the reporting does not provide information on the effect of the donation on either the recipients or the company itself. They also question whether philanthropic programmes should be assessed according to financial value:

> "… is a million dollars of 'giving' to be valued the same way irrespective of its use or its effectiveness for the intended beneficiaries and the company itself? Clearly not" (Zadek et al, 2015, p.6).

Brown et al. (2006) are also sceptical. They found some evidence that donations to charities and expenditure on other philanthropic concerns enhanced shareholder value. Consequently, companies with larger boards of directors and those with lower debt-to-value ratios are more likely to donate fund and establish corporate foundations. Similarly, companies which perform less well in the areas of employee relations, environmental issues and product safety are more likely to make charitable contributions. As explained by Chen et al (2008, p.131),

> "… [r]ather than being a purely altruistic sharing of discretionary resources with society, corporate philanthropy may instead be being used as a means for companies

to mitigate exposures to their social legitimacy brought about by poor performance in other social domains".

As a result, we acknowledge, from the outset, that corporate accounting and accountability for rhinoceros conservation and protection may represent another example of 'philanthropic accounting' informed, primarily, by the need to manage impressions. This is consistent with a large body of critical accounting research which draws on a social constructionist paradigm to demonstrate how companies employ different methods of accounting and reporting to construct a more favourable image of an organisation than may actually be the case (Higgins and Walker, 2012; Solomon et al, 2013; Tregidga et al, 2014). This is discussed in more detail in Section 3.2.

3.2: **Accounting as social construction and emancipation**

Accounting researchers have devoted significant attention to interpreting corporate reporting through the post-modernist frame of social construction and narrative discourse analysis. For example, Spence (2007) explored social and environmental accounting using discourse theory from Laclau and Mouffe (Laclau and Mouffe, 1985; Laclau, 1990) which derives from the Gramscian hegemonic tradition. Gramsci, in his 'Prison Notebooks', outlined ways in which groups (including the 'intellectual elite') maintained hegemonic control over society through intellectual dominance (Gramsci, 1971). Laclau and Mouffe (1985) explain that, through language and discourse, a particular version of 'reality' can be constructed. Berger and Luckmann's seminal treatise on the social construction of reality (Berger and Luckmann, 1966) demonstrates how everyone's perceptions of reality differs but how communication is crucial in allowing us to share each other's versions of reality, as,

> "The reality of everyday life further presents itself to me as an intersubjective world, a world that I share with others. This inter-subjectivity sharply differentiates everyday life from other realities of which I am conscious. I am alone in the world of my dreams, but I know that the world of everyday life is as real to others as it is to myself. Indeed, I cannot exist in everyday life without continually interacting and

> communicating with others…..I also know, of course, that the others have a perspective on this common world that is not identical with mine. My 'here' is their 'there'. My 'now' does not fully overlap with theirs. My projects differ from and may even contradict with theirs" (Berger and Luckman, 1966, p. 37).

On the limitations of non-financial reporting

Applying this social constructionist perspective to accounting allows us to interpret accounting as a means for companies to construct, disseminate and maintain a particular image which they wish people to believe in (Higgins and Walker, 2012; Tregidga et al, 2014). A social constructionist interpretation of financial accounting and its relation with social welfare is explained as follows:

> "… if financial accounting reduces all problems to economics, activities that have malign social and environmental consequences begin to appear rational and desirable. In ignoring these social and environmental consequences financial accounting actively shapes social reality" (Spence, 2007, p.7).

Indeed, corporate attempts to produce sustainability reports have been criticised, from a social constructionist perspective, as merely instruments employed to perpetuate their own hegemonic world view (Laine, 2009b; Milne et al, 2009; Tregidga et al, 2014). As explained by several critical writers, the social, environmental or sustainability reporting movement promised a move towards a more holistic approach to business management and reporting but failed to live up to expectations (Gray et al, 1995; Bebbington et al, 1999; Adams and McNicholas, 2007; Gray, 2010). In the context of a continuing dominance of organisational discourse by economic or financial paradigms, sustainable development is interpreted as a business threat and, as a result, the transformative potential of sustainability reporting is significantly reduced by efforts to maintain hegemonic control (Tregidga et al, 2014). As stated by Spence (2007, p.8), "the notion that SER [social and environmental reporting] could ever portray a complete social and environmental reality is itself impossible”. A review of the prior research on biodiversity reporting confirms this view.

A special issue of the *Accounting, Auditing & Accountability Journal* (2013) was devoted to locating accounting for biodiversity within a cultural, historic, philosophical and accountability framework (Jones and Solomon, 2013). The special issue aimed to identify a series of challenges in the hope that their identification would lead to the development of solutions (ibid). These included the difficulty of defining ‘biodiversity’; assessing the current extent of biodiversity reporting; the technical challenge of accounting for changes in biodiversity mass; and identifying whom to hold accountable for biodiversity loss (see also Jones, 2014; Mansoor and Maroun, 2016).

Examinations of the nature and form of biodiversity accounts are, however, often couched in an anthropocentric construct (Atkins et al, 2014). The focus is on recording of and reporting on species which are ‘of use’ to humans rather than a genuine commitment to preserving all species because of their ecological or intrinsic value (Rimmel and Jonäll, 2013; Samkin et al, 2014). For example, Atkins et al (2014) argue that ‘biodiversity reporting’ is framed as an internal control and risk management exercise. In this context, ‘biodiversity risks’ are understood in only financial terms and protecting and enhancing biodiversity are, in fact, attempts to mitigate business risks and financial losses. Likewise, Cuckston (2013) and Freeman et al (2013) discuss biodiversity loss in terms of existing valuation and financial accounting methodologies. Their research highlights limitations in the accounting system but stops short of providing a clear framework for reporting on biodiversity loss which encourages organisations to change their business processes. Tregidga et al (2014) reach a similar conclusion, demonstrating how sustainability considerations (which would include biodiversity loss) are interpreted in terms of a business or finance discourse which limits (and even negates) the transformative potential of sustainability and biodiversity reporting (see also Tregidga, 2013; Mansoor and Maroun, 2016). In this context, there is often a disconnect between corporate rhetoric on the need to protect the environment and evidence on specific actions being taken to address material risks to biodiversity.

Cho et al (2015), for example, argue that organisations rely on special and temporal distance in their corporate reporting to balance conflicting stakeholder expectations. Demands for more detailed accounts on environmental impacts are addressed by policy-related disclosures which meet reporting requirements and espouse the need for sound environmental practices (see also Gray, 1992; Higgins and Walker, 2012; Tregidga et al, 2014). Specific details on environmental action plans, progress made to date and the timelines for implementation of important reforms are, however, seldom provided. As explained by Malsch (2013, p. 155), the aim is to:

> 'consign the social and environmental effects of economic activity to a relatively distant future at the scale of the planet, beyond the temporal and spatial horizon of most citizens and enterprises. Any contribution that companies and even whole countries might make to the prevention of climate change or to maintain the well-being of people is accordingly insignificant'.

The significant threat posed by environmental unsustainability to contemporary society is well-documented by the scientific community. In contrast, organisations rarely articulate these risks in their integrated and sustainability reports (Atkins et al, 2016; Maroun, 2016). Where issues such as climate change, habitat destruction and loss of species are covered, the disclosures are generic. Biodiversity conservation is often framed as a general concern which is the responsibility of a broad group of stakeholders and beyond the jurisdiction of the respective organisation. As such, specific commitments to protecting biodiversity are infrequent and often couched as long-term considerations rather than pressing issues which require immediate attention (Rimmel and Jonäll, 2013; Tregidga, 2013; Cho et al, 2015; Mansoor and Maroun, 2016). The aim is to satisfy expectations for at least some environmental reporting, defer substantive reforms which may impact financial performance adversely and leave stakeholders assuming that long-term sustainability has been taken into account by business leaders. Research on private reporting (verbal engagements in one-on-one meetings between companies and their core institutional investors) confirms these views.

Interpretations of the private reporting context have referred to neo-Gramscian frameworks such as Freire's dialogic approach to education within an oppressed society (Solomon and Darby, 2005). There is a clear case of organisations mobilising different forms of stakeholder expectations to manage or constrain the debate on ESG-related concerns, limiting the emancipatory potential of the sustainability reporting movement (Solomon et al, 2013). The researchers demonstrate various ways in which companies create a specific reality for their readers using the annual or sustainability report. The image of the organisation presented in these documents is designed specifically to allow readers to reach more favourable conclusions about the organisation than the company's own interpretation of its situation (see for example, Aerts, 2005; Beattie, McInnes, and Fearnley, 2004; Beattie and Jones, 1992, Beattie and Jones 2002; Beattie, Dhanani and Jones, 2008; Guillamon-Saorin, 2006; Jones, 2011; Mather, Mather, and Ramsay, 2005; Preston, Wright, and Young, 1996).

Towards an emancipatory accounting schematic

From a social constructionist perspective, little research has taken a view that a more positive and ecological perspective may be validly constructed by corporate reports. Does creating a social reality through accounting always have to be motivated by negative, hegemonic forces? The Gramscian tradition in social theory tends to assume that the creation of social realities by the most powerful groups in society is associated with coercion and oppression through ideological hegemony. Surely such powers can be wielded for good? The potential for accounting to be emancipatory and to drive positive change is always there, as:

> "… an appreciation of accounting's emancipatory possibilities implies seeing accounting as at least potentially aiding (and being integral to) or giving further help to an emancipatory project. Critical researchers thus envisage accounting as functioning to help overcome repressive obstacles so that a better state is realised …A vision of accounting as an emancipatory force is consistent with seeing accounting as a communicative social practice that functions as a system of informing that renders transparent and enlightens with the effect of social betterment" (Gallhofer and Haslam, 2003, p.7).

In other words, despite substantial evidence that companies employ sustainability reports to manage impressions and forge realities they wish to have disclosed (Solomon et al, 2013; Tregidga et al, 2014), there may also be some potential for genuinely concerned managers and directors to employ reporting as an emancipatory tool. For example, Gray et al (1995) identify a number of shortcomings in the environmental accounting movement. Nevertheless, the researchers find examples of a growing awareness of the need for environmental accountability and some evidence of reforms to current business practices. Similarly, Adams and Frost (2008) find that some organisations are beginning to integrate environmental (and social) indicators into their strategic planning and key performance indicators suggesting that the environmental reporting considerations are, to some extent, being 'internalised' by corporations and promoting some level of change. More broadly, Atkins et al (2015) and Dillard and Reynolds (2008) suggest that accounting systems, by virtue of their ability to construct different fields of measurement, evaluation and review, can be successfully mobilised to drive genuine sustainability reforms. This would enable fears of impending environmental issues (including extinctions) to drive a new form of accounting and accountability. These would be less involved with managing impressions and building reputation and more concerned with demonstrating corporate activities which are seeking to reverse negative trends.

It is on this basis that this paper seeks to examine the corporate disclosures of South African companies in order to establish whether their 'extinction accounts' may actually be aimed at reducing the threat of rhinoceros extinction and improving corporate accountability and ecological protection. More specifically, the recent development in corporate disclosures relating to rhinoceros conservation could be interpreted as a change in corporate narrative or discourse. As suggested by Shotter and Gergen (1989), a narrative is not created by the individual/company but by the external culture and influences on that company. As mentioned in Section 1, the sudden realisation that one of the 'Big Five' may be on the brink of extinction is an example of an external cultural influence which is likely to impact the corporate narrative. Consequently, reporting on the plight of the rhinoceros is more than an exercise in GRI compliance or impression management. It suggests a change in corporate behaviour in terms of which the entity becomes aware of a sustainability issue which is not linked specifically to its business model and demonstrates that it is taking action to address negative effects for which it is not specifically responsible. In doing so, the sustainability or integrated report becomes a link between the organisation's discourse and the social narrative which champions the preservation of the rhinoceros (see Gray, 1992; Gallhofer and Haslam, 2003).

In other words, 'extinction accounting' may be emerging as a new form of accounting where, to paraphrase Gallhofer and Haslam (2003, p.7), the "connotations of accounting that see it as negative are transformed through praxis into connotations that see it as positive". The accounting system, rather than restricting the sustainability agenda (Tregidga et al, 2014) actually functions as an instrument of "social well-being or welfare" which is aligned with an "emancipatory project" (Gallhofer and Haslam, 2003, p.162). Communication through emancipatory narrative reporting may assist organisations to enhance the reality they "create". As Pearson (2007) argues, changing patterns of communication such as shifting an organisational culture of "command and report" style communication to one which is listening, deliberative and dialogic, provides a means of forming better social worlds. Indeed, this perspective on communication demonstrates the power of the organisational discourse and how it may be altered to enhance societal welfare. We now discuss the plight of the mighty rhinoceros and the current and potential role of accounting in saving the species from extinction.

4: Rhinoceros in South Africa

The rhinoceros was found across most of Africa with an estimated population of 500,000 animals at the start of the twentieth century. This stands in sharp contrast with the present situation. In the mid-1830s there were great numbers of black rhinoceros reported on expeditions in Southern Africa, although these expeditions seemed to involve shooting the animals as game (Guggisberg, 1966). By the 1960s very few black rhinoceros were left south of the Rivers Zambesi and Kunene. Indeed, concerns about the decline in rhinoceros is by no means a 21st century phenomenon, as, for example, "In Kenya responsible people began to worry about the dwindling numbers of rhinoceros as early as 1906, when large scale poaching was reported" (Guggisberg, 1966, p.50). As early as 1932, extinction of the rhinoceros was seen a credible threat,

> "Many more people are out to slaughter the gigantic beasts than there are beasts to be slain. Their armour does not protect them. Extinction is approaching rapidly. In another hundred years their stuffed mummies will stand in the museums of the world, next to the skeletons of the tyrannosaurus…" (Bengt Berg, quoted in Guggisberg, 1966, p.144).

In 2011 the IUCN declared the Western Black Rhinoceros extinct citing poaching as the main reason for this species' demise. The remaining five species are presently listed on the IUCN's Red List of threatened species with three of these being classified as critically endangered (Save the Rhino, 2015). Despite efforts to protect the species from human exploitation, the effects of habitat loss and poaching have been severe (Save the Rhino, 2015). The harsh and cruel reality of poaching and the inhumane impact it has on the rhinoceros is captured by a conservationist, who describes how rhinoceros' "… natural world collided with man's destructive, greed-fuelled way of life. For the rhinos the result of this clash was a new world of pain, blood, blindness, suffering and a mighty struggle to survive" (Peirce, 2013, p. 139).

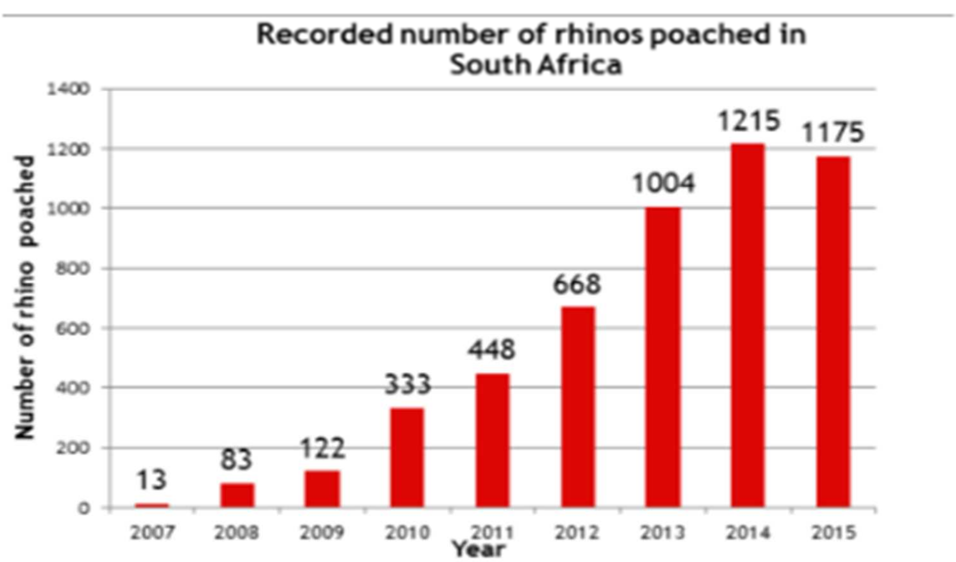
South Africa has been particularly hard hit. The country has the one of the world's largest populations of the rhinoceros. The country's Kruger National Park, for instance, boasts an estimated 5,000 animals (SANParks). Poaching in South Africa has, however, reached a crisis point. A total of 668 animals were lost to poaching during 2012 with the Kruger National Park worst affected after reporting 425 animals lost to poachers. The number of deaths exceeded

1,000 animals in 2013 increasing to 1,215 in 2014 thereby threatening the survival of the species (South African Department of Environmental Affairs, 2013). Statistics released by the South African Department of Environmental Affairs highlight the escalating extent of the crisis (see Figure 1). The Kruger National Park has remained the biggest target for poachers so far in 2015, with 290 rhino killed there between January and the end of April. The South African Environmental Minister stated that 393 had already been lost to poachers by May 2015. However, there has been a sharp increase in arrests.

Poaching exists because of the high value placed on rhinoceros horn. Recent statistics suggest that the market price of horn has increased from between 400 and 700 per cent and for Taiwan the price has grown by 2,800 percent (Walker and Walker, 2012). In 1979 the average price for African rhinoceros horn in the Asian market was US$550 per kilogram. This had increased to as much as US$1,000 per kilogram by 1993 and is currently around US$60,000 per kilogram (Walker and Walker, 2012).

Figure 1

Poaching statistics



(Save the Rhino, 2015[4])

[4] https://www.savetherhino.org/rhino_info/poaching_statistics

Much of the increase in poaching is the result of a growing illegal trade in rhinoceros horn for supply to Asian Markets (IUCN, 2013). As a result, the IUCN and the South African Department of Environmental Affairs are attempting to address the problem by lobbying for revised regional and international trade laws which will curb the supply of rhinoceros horn. This has been complemented by a concerted effort at educating Asian consumers to combat the cultural belief that the animal's horn can be used as an aphrodisiac (IUCN, 2013). In the 1950s it was reported that rhino horn was believed to ease childbirth and that owners or horns would rent them out for the equivalent of £30 to expectant mothers (Gee, 1959). Rhinoceros horn is valued as a medicine and in many decorative ways by cultures the world over. The South African Police Service (SAPS) has also joined the fight, declaring the illegal trade of rhinoceros horn to be a priority issue. Arrests increased from 165 in 2010 to 267 in 2012. This has gone hand-in-hand with revisions to legislation including stricter controls on hunting permits and the transportation of horn leading to a reduction in the number of hunting applications from 222 in 2011 to 90 in 2012 (South African Department of Environmental Affairs, 2014). At the same time, the National Environmental Management Laws First Amendment Bill and the National Environmental Management Laws Second Amendment Bill have been tabled in an effort to curb the abuse of the hunting permit system and make it easier to hold individuals engaged in these activities criminally liable. The Bills will further restrict the transport of specimens making trafficking of horns more difficult (South African Department of Environmental Affairs, 2014).

Nevertheless, the country's dwindling population of rhinoceros remains at risk. Poaching units are normally well equipped and trained making it difficult for park rangers (with limited funding) to combat these criminals. This has prompted a significant response from the private sector with many of South Africa's largest companies introducing a number of initiatives to raise much needed funds to deal with the unprecedented poaching of one of South Africa's "Big Five". Conservationists have long concerned themselves with the rhinoceroses' extinction threat commenting for example, "… the world has to unite to save its heritage, a biological legacy that involves more than rhinos. Conservation is the responsibility of all nations, not just a few. If we cannot protect rhinos, why should we expect a better fate for ourselves?" (Cunningham and Berger, 1997, p.230). Passionate conservations and ecologists need the assistance of multinational corporations and big business if they are to succeed in preventing extinction. We see from the analysis that follows the many initiatives and projects underway to reduce poaching, enhance rhinoceros populations and prevent extinction. It is, however, extremely difficult to prevent extinction when a species such as the rhinoceros has attracted financial value, constructed through the social perceptions associated with rhinoceros horn, with the cost of trophy hunting, as well as the value of rhinoceros for business purposes such as ecotourism, "… because of the way we have constructed the world to operate, wildlife must have an economic value to make it viable and keep it worthwhile. It is not enough to say that the African bush and wildlife must be preserved for its own safe, for aesthetic or moral reasons" (Booth, 1992, p.185). This may have been the case in the past but we consider in this paper whether the urgency of extinction threat has brought even big business to consider extinction prevention for moral reasons as well as for financial. The way in which the value of the animal dead balances against the value of the animal alive is a dangerous economic predicament and one which can only be addressed through hard work, education and collaboration between all parties involved.

5. Research method

In keeping with our aim of outlining an extinction accounting framework, we subscribed to a social constructionist worldview. The language used by companies is seen as playing an important role in constructing a specific organisational identify and demonstrating how companies' discourse is being aligned with a broader social narrative (Laine, 2009b; Higgins and Walker, 2012; Tregidga et al, 2014). As a result we use an interpretive text analysis (informed by discourse analysis) to study the disclosures of the 41 of the largest companies listed on the Johannesburg Stock Exchange (JSE)[5]. The companies included in our study are listed in Table 1.

Table 1

List of companies included in the analysis

[5] This was by market capitalisation at the time of data collection in 2014. The top 40 companies was selected but an additional company was included in the analysis due to a change in ranking of the largest listed companies at the time of review.

Anglo American Platinum Ltd
Anglo American PL
AngloGold Ashanti Ltd
Aspen Pharmacare Holdings Ltd
Assore Ltd
Barclays Africa Group Ltd
BHP Billiton PLC
Bidvest Group Ltd
British American Tobacco PLC
Capital & Counties Properties PLC
Compagnie Financiere Richemont SAC
Discovery Ltd
Exxaro Resources Ltd
FirstRand Ltd
Growthpoint Properties Ltd
Impala Platinum Holdings Ltd
Imperial Holdings Ltd
Intu Properties PLC
Investec Ltd
Investec PLC
Kumba Iron Ore Ltd
Life Healthcare Group Holdings Ltd
Mediclinic International Ltd
Mondi Ltd
Mondi PLC
MR Price Group Ltd
MTN Group Ltd
Naspers Ltd
Nedbank Group Ltd
Old Mutual PLC

Reinet Investments SCA
Remgro Ltd
RMB Holdings Ltd
SABMiller PLC
Sanlam Ltd
Sasol Ltd
Shoprite Holdings Ltd
Standard Bank Group SBK
Steinhoff International Holdings Ltd
Tiger Brands Ltd
Woolworths Holdings Ltd

The researchers considered the content in integrated reports and sustainability reports and on the above companies' webpages from 2011-2013 which was the period covering the most significant increases in poaching year-on-year. In addition, the researchers were able to gain a sense of whether or not disclosures were being provided consistently over this time and were not limited to a particular year[6].

We concentrate on these organisations for four reasons. Firstly as listed companies they are required by the JSE (from 2010) to either prepare an integrated report or provide reasons for not doing so (Atkins and Maroun, 2015). They should have a detailed understanding of reporting on different types of capital and explaining interconnections between various financial and non-financial performance measures (IIRC, 2013). As such, they offer established cases for investigating the emergence of new forms of accounting practice. Secondly, the nature and extent of information provided to users is likely to be less affected by resource constraints. In other words, the reports provide a reasonable account of the issues which these companies deemed relevant rather than reflecting the information which could be provided subject to material cost constraints. Thirdly, the resources available to these organisations mean that they have the ability to engage actively with their stakeholders and affect specific societal change.

[6] The 2014 and 2015 periods were not included as the reports were not available at the time of data collection, which occurred from June to December 2014.

Finally, the sample is made up of a range of companies from different sectors including food production, retail, financial services and mining. The aim was not to identify reporting trends by industry but the researchers wanted to gain a sense of reporting by South African companies in general rather than focusing on those sectors (such as extraction, construction and energy) which have a high environmental impact and may be more likely to report on biodiversity losses.

Data collection and analysis

Data were collected from integrated reports, sustainability reports and corporate websites and were analysed systematically by two of the researchers. They read each corporate report in detail identifying references to biodiversity issues. Three specific types of content were concentrated on: narrative on the rhinoceros, disclosures dealing conservation in general and references to extinction of species.

In keeping with a social constructionist approach, the researchers made no effort to quantify the disclosures in a positivist sense. Instead, each section was reviewed carefully to identify content on accounting for extinction and how diction and tone was used to convey the corporates' views on rhinoceros poaching and the need for action (adapted from Laine, 2009b; Merkl-Davies et al, 2011; Solomon and Maroun, 2012; Tregidga et al, 2014). To do this, each section of the reports or webpages under review were examined in the context of the discussion on the role and limitations of the GRI and biodiversity reporting (Section 2) and the possibility of the content being used in an impression management or transformative/emancipatory role (Section 3).

This was a time consuming process which required each company's disclosure to be analysed at least twice. The interpretive approach used for analysing the data also relied significantly on the researchers' judgement. As a result, to ensure reliability, the final analysis of the integrated reports, sustainability reports and company webpages was reviewed by the lead researcher for reasonableness. Draft results, were also presented at three different conferences to ensure that the findings resonated with a broad audience.

Results were grouped according to broad theme headings as presented in Section 6.1. This was used to gain a sense of the scope of reporting dealing with the rhinoceros and identify links between corporate narrative and the transformative potential of accounting systems, as discussed in Section 1 and Section 3. It must be stressed that this process was not intended to follow a scientific method. The relatively limited body of research dealing with accounting for extinction (Jones and Solomon, 2013) resulted in a subjective analytical approach which progressed in hermeneutical manner unrestricted by a rigid methodological framework (Llewelyn, 2003; Laine, 2009b). In this light, theme headings were developed interpretively by the researchers and the 'assignment' of specific content to different themes was informed by a lively debate among on the researchers on the 'essence' of each disclosure example under review. The aim was not to 'measure' the disclosures according to a defined scale but each to generate initial views on the emphasis being placed on the rhinoceros in corporate communication with stakeholders and gauge the sense of importance of the possible extinction of these animals (adapted from Laine, 2009b; Laine, 2009a). In this way, as explained by Laine (2009a, p. 1034), data analysis and reduction was not restrictively formal to allow for creative analysis and interpretation. Instead, the researchers relied on 'a process of subjective sense-making, which included numerous rounds of reading and various attempts to systematise the findings into a coherent interpretation'.

6. Findings from the interpretive content analysis

Our disclosure analysis revealed the following themes: (1) educational-focused initiatives; (2) direct wildlife protection initiatives; (3) partnership and collaborative corporate initiatives; (4) customer-focused initiatives; (5) stakeholder-focused initiatives; (6) genuine concern for native wildlife and cultural heritage in South Africa; (7) materiality of rhinoceros initiatives; ; (8) specific disclosures relating to extinction; and (9) business incentives for rhinoceros protection and conservation. Many of these themes indicate the emergence of a corporate discourse aligned with a social narrative which is championing the plight of the rhinoceros. There are indications of a growing awareness of the effects of poaching and a need for change, problematising the extinction threat for the rhinoceros. This is complemented by evidence of specific corporate action and 'call to arms' aimed at different stakeholders. The specific themes are discussed in Section 6.1.

Section 6.2 explains how these themes are indicative of an emerging form of 'extinction accounting'.

6.1: Theme identification

Educational-focused Initiatives

The disclosures show that Woolworths ran a campaign from 2013, 'Swipe for Africa', which targeted over 400 South African schools. This initiative aimed to raise awareness among schoolchildren about endangered species and raised funds for rhinoceros conservation. The company reported that three schools each raised R100 000[7] plus the chance to donate R100 000 to the charity of their choice (paid for by the company?) (Good Business Journey Report, 2013, p.41). They also ran a 'rhino bags' initiative, where Woolworth explains, "these bags have educated consumers on the facts", (Good Business Journey Report, 2013, p.79) indicating an educational motive behind the initiative and perhaps also the disclosure.

Direct Wildlife Protection Initiatives

There are a wide range of initiatives in which companies are engaged in order to protect and conserve rhinoceros. The Investec website, for example, provides detailed information regarding the necessary initiatives and how they are contributing to them at all levels. Similarly, Vodacom Group Ltd explain that, although the tracking and monitoring of endangered species is critical to their conservation and protection, many African game reserves do not have the capacity to "run effective monitoring programmes and require assistance to ensure this vital component of conservation is carried out" (Company website., Wildlife ACT, Vodacom Corporate). To assist in this respect, Vodacom developed machine-to-machine technology which tracks wildlife. They explain that this technology took only 30 minutes to configure and two weeks to implement with zero server downtime.

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[7] South Africa's currency is the Rand. At the time of review, 1USD = R13.

Standard Bank Group Ltd stated in their 2012 Sustainability Report that they had held sessions on rhino poaching interventions during the year. Further, Standard Bank hosted an event in March at which a multi-million rand donation was provided to SANParks. The aim of this donation was to enhance rhinoceros protection in the Kruger National Park. The company explained in an online blog that this funding would be used to create, "… an Intensive Protection Zone using sophisticated detection and tracking equipment, as well as infrastructure in the air and on land"[8]. The bank also provided preferential banking fees and interest on the funds donated.

Mondi Plc highlights its global best practice case study in the company's sustainable development review.[9] The case study focuses on the company's SiyaQhubeka Forests, in KwaZulu-Natal. The company has partnered with government, local communities and other corporations to ensure that approximately 9,000 hectares of land is incorporated into the iSimangaliso Wetland park to ensure habitat for rhinoceros as well as other endangered species. (It is notable that there is significant repetition regarding this case study on the company's sustainable development reports of 2011, 2012, 2013 and 2014, indicating a tendency for boiler-plate disclosure.)

The extractive company, Exxaro Resources Ltd, explains on the corporate website that one of its subsidiaries, Kumba Resources Limited, has announced that Ferroland, the wholly owned subsidiary responsible for the management of Kumba's natural resources, has expanded their Menketti Reserve from 6,000 to 14,000 hectares, thus creating one of the largest privately-held wildlife reserves in South Africa.[10]

Compagnie Financiere Richemont SAC stated in their annual report (2014) that, in response to the illegal wildlife trade that is destroying Africa's elephant and rhino populations, they have launched a programme to combat wildlife crime. However, the report does not provide further details about this programme.

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[8] Taken from the #Aid4Rhino Standard Bank blog.
[9] See the following website: http://www.newgenerationplantations.com/pdf/case6.pdf
[10] Follow the direct link: http://www.exxaro.com/index.php/kumba-resources-expands-wildlife-reserve/

Anglo American PLC discuss their vision for the future as they plan to develop a wildlife park which will be used to promote educational and recreational activities. They plan to introduce game drives and hiking trails in order to be able to extend the park and support game such as the white rhinoceros.[11]

These initiatives involve committing substantial resource to rhinoceros protection and conservation. Importantly, this is not only in terms of direct monetary contributions. There are examples of companies engaging actively with different stakeholder groups (such as RAGE) and developing specific technological solutions using their in-house expertise.

Partnership and Collaborative Corporate Initiatives

Companies discussed numerous partnerships with a wide range of groups in their corporate reports and on their websites. For example, Old Mutual has partnered with Earth Night in order to raise funds for conservation projects including rhinoceros protection and conservation.[12] Investec Ltd. stated in their 2013 integrated report that they have partnered with scientific experts to launch Investec Rhino Lifeline. The aim of this initiative is to raise awareness of the rhinoceros crisis and respond through education, rescue and prevention initiatives. Specifically, Investec emphasise that this partnership is motivated by recognition of the "… intensity of the rhino issue in Southern Africa" (Integrated Report, 2013, p.110). As an additional illustration, First Rand Ltd states that it supports the Endangered Wildlife Trust and highlights their work in conserving rhinoceros as well as other endangered species.[13] Similarly, the website of the Game Ranger Association stated that Barclays Africa Group have partnered with Prince Albert II of Monaco to sponsor the Rhinoceros Conservation Awards.[14]

Partnerships between organisations and various environmental experts/NGO's were complemented by collaborations between organisations which would otherwise view each other as competitors. For example, Bavaria Brewery, facilitated a campaign, 'Adopt So Our Rhino

[11] See the company's website
[12] See the company website, http://www.oldmutual.co.za/ under press releases
[13] See the company website: FirstRand Foundation
[14] See the website of the Game Ranger Association on http://www.gameranger.org/news-views/89-nominations-for-the-rhino-conservation-awards-are-now-open-3.html

Don't Die'. This collaboration included Woolworths, Spar, Massmart, Pick 'n Pay and divisions of the Shoprite Checkers Group. All of the collaborators matched a margin sacrifice from every purchaser of any six-pack of select drinks to raise funds for this initiative. Similarly, the Rhino Action Group, RAGE, is conducting a massive public campaign to raise public awareness and encourage participation in conversation programmes. The aim is also to bring attention to those companies which are donating funds and resources to rhinoceros conservation and protection. Companies collaborating in this initiative included the large retailers, banks and media houses.[15]

Customer-focused Initiatives for Rhinoceros Conservation and Preservation

Many of the corporate initiatives appeared to be focused primarily on customer stakeholder groups. For example, Woolworths Holding Ltd produced a 'Good Business Journey Report' each year from of the period studied in which they described the launch of their 'rhino bags' initiative, explaining that this was in response to the "dramatic increase in rhino poaching'. The bag is a limited edition, reusable bag which asks customers to 'Imagine No Rhino'. They then donate R10 from the sale of each bag to, "help protect remaining rhino populations from extinction" (Good Journey Business Report, 2011, p.60). By 2011, Woolworths Holding Ltd. had sold 600,000 rhino bags, amounting to a donation of over R1 million. The company has been working in partnership with the WWF, channelling these funds into financing anti-poaching equipment and to supporting rangers across the region.

Further, Woolworths has introduced a MyPlanet card for customers. Customers can select which of three charities they would like to support, one of which is the Endangered Wildlife Trust (EWT) Rhino Fund. The company then donates a percentage of the purchase to the charity selected. In April 2013, Woolworths also launched the 'Every Paw Print Counts' range of bracelets, sweets and reusable bags. These are aimed to "… raise additional awareness and funds" (Good Business Journey Report, 2013, p.41) for charities including the EWT MyPlanet Rhino Fund. This initiative raised over R100,000 in its first year.

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[15] See the RAGE website, "Rhino Action Group Means Business".

Nedbank Group Ltd have a high profile in green initiatives in South Africa. In 1990, together with World Wildlife Fund-South Africa (WWF-SA), Nedbank founded WWF Nedbank Green Trust, which aims to protect the unique biological diversity of Southern Africa and to counter the adverse effects of unsustainable development. Their corporate website has a substantial section entitled, 'Nedbank Green Affinity', which details their green financial products. For every Green Affinity savings account opened by a customer, the bank makes a donation of R2.50 initially followed by a quarterly contribution to the Green Trust, based on the client's daily credit balance. For customers holding a Nedbank Green Affinity credit card, the bank donates monthly to the Green Trust a percentage of total purchases. Further, when a customer opens a Nedbank Green Affinity current account, the bank donates a fixed monthly fee to the Green Trust, with no additional premium charged to clients.

In relation specifically to rhinoceros protection, Nedbank stated on a recent blog that continued strategic action is crucial across the entire illicit rhinoceros horn trafficking network in order to address the South African rhinoceros poaching crisis. The blog quotes the latest statistics on rhinoceros poaching demonstrating an educational and awareness-raising element to the company's extinction accounting on their website disclosures.

Nedbank's initiatives have raised more than R115 million to date for more than 180 major conservation projects. Despite this being a clearly 'green initiative', it does have a financial benefit for the company by attracting customers and enhancing corporate reputation. As a result, it can be argued that there is an element of impression management. The sums being contributed to wildlife conservation and preservation are, however, substantial and the impact on rhinoceros preservation and conservation is likely to be significant suggesting that the company's 'green initiatives' are a genuine form of sustainability engagement.

Stakeholder-focused Initiatives

Companies are tapping into societal concern over rhinoceros extinction by encouraging the general public to participate in initiatives. Although companies are donating money to rhinoceros conservation, this is only in response to stakeholder action. In a way, this is placing the emphasis on public participation rather than purely corporate philanthropy.

For example, in addition to providing preferential treatment for funds donated to SANParks, Standard Bank launched a social media campaign in order to raise significant donations to rhinoceros protection in the Kruger National Park. The bank pledged to donate R10 to the SANParks account for every sharing of the post #Aid4Rhino.

Genuine Concern for Native Wildlife and Cultural Heritage in South Africa

Some of the disclosures suggested a genuine concern for native wildlife and the cultural heritage of South Africa. For example, Woolworths stated, "… wherever we are in South Africa, our behaviour affects our precious wildlife" (Good Business Journey Report, 2013, p.41). Similarly, Investec stated that they are "… proud to be associated with a number of non-profit organisations that are working hard toward creating a sustainable future and preserving the future security of the world's rich cultural and national heritage" (Integrated Report, 2013, p.110). Further, Investec state that:

> "Given Investec's African roots, we are passionate about ensuring the continued existence of a number of African species. We, therefore, fund three biodiversity projects which are focused around rhinos, wild dogs and the impact of renewable energy on local birdlife. These initiatives allow Investec to give back to the environment and help ensure the sustainable existence of South African wildlife" (Sustainability Report, 2013, p.25).

Investec also stated that,

> "South Africa loses rhinos on a daily basis. The rhino crisis has become the most significant conservation issue faced by the country. Poaching attacks represent lawlessness, a lack of political will, human greed, and a disregard for the wellbeing of

animals in spite of the most dramatic public response in our conservation history" (Sustainability Report, 2013, p.25).

This seems to go far further than impression management or reputation-building type disclosures. The above extract displays a genuine desire to contribute to avoiding rhinoceros extinction and to enhance South Africa's wildlife due to a love for the country's heritage. In the authors' views, the comments are too passionate to be motivated purely by impression management. This disclosure also seems to portray a corporate form of accounting which adopts a moral high ground and takes a purely ethical stance. The 'reality' being constructed and communicated through this corporate reporting is one which appears to hold rhinoceros protection and extinction prevention at a premium.

Materiality of Rhinoceros Initiatives

We did not find examples of companies dealing specifically with the rhinoceros as part of their materiality considerations in their integrated or sustainability reports. For example, there were no definitions of 'materiality' in these documents which explained how different conservation efforts were being evaluated or the processes used to decide what information to include in the different reports. The researchers did not, however, feel that this detracted from the emphasis being placed on rhinoceros conservation.

Materiality, in general, was not explained in detail. Consistent with some of the prior research, companies appear to be battling with the concept of 'materiality' (which is often financially-focused) in the context of qualitative non-financial reporting (Atkins and Maroun, 2015; Edgley et al, 2015; PWC, 2015). Consequently, the fact that different conservation efforts were not linked directly to a clearly laid out materiality assessment does not automatically mean that the disclosures are simply provided for the sake of impression management.

On the contrary, the sums contributed to rhinoceros conservation and protection by many of the companies we studied are substantial and, in several cases, likely to be material for the companies involved. For example, Woolworths' Integrated Report (2012) states that their, "Annual contribution to society around us ranges from R1 million for protecting rhinos through the sale of our rhino bags" (Integrated report, 2012, p.14). Thus, the company considers this is a material financial amount which should be reported in the integrated report. This suggests that a form of 'extinction accounting' may be starting to enter the primary annual report.

Specific Disclosures relating to Extinction

Mediclinic International Ltd comment specifically on extinction threats. The company's integrated report deals with the size of land holdings adjacent to protected areas, including those with high biodiversity value. The organisation comments on the significant impact of its products and services on biodiversity and its strategies, current actions and future plans for managing the impact on biodiversity. Of particular importance for the purpose of this paper is specific disclosure dealing with the number of IUCN Red List species and national conservation list species with habitats in areas affected by operations. This information appears to be aggregated by level of extinction risk (Integrated Report, 2011, p.121; Sustainability Report, 2013, p.68; Sustainability Report, 2012, p.64; Sustainability Report, 2011, p.121). The corporate website for Investec states that,

> "South Africa is losing rhinos daily, through poaching. It is the most significant conservation issue faced by the country and time is running out. In 2012 Investec established Investec Rhino Lifeline to respond to this crisis … By working closely with our trusted partners and supporters, and by taking a hands-on approach, we believe that we can make a difference in saving the rhino and ensuring its long-term survival."[16]

This does not seem to coincide with public relations-driven disclosure aimed at building corporate reputation and managing impressions. Rather it appears to be a form of accounting driven by the realisation of imminent extinction of a species. Again, there is impassioned language used in this 'extinction accounting'. For example, "Rhinos are at the centre of a violent,

[16] This is from the company website; https://www.investec.co.za/about-investec/sustainability/planet/investec-rhino-lifeline.html.

well-organised series of poaching attacks in South Africa due to rampant trade in rhino horn". This depicts a form of corporate reporting which is characterised by sincere, emotional, rhetoric, which is quite the opposite of traditional accounting rhetoric based on calculative rationalities. Imperial Holdings Ltd stated that,

> "The plight of South Africa's rhinos continued to dominate headlines during the year, with poaching reaching epidemic proportions. In response to the situation the Distribution, Retail and Allied Services division launched a programme to provide protection to 12 white rhinos in the Rietvlei Nature Reserve outside Pretoria" (Sustainability Report, 2013, p.55).

The disclosure goes on to explain that the company provided the financial support for each rhinoceros to be tagged and to assist in ongoing security within the reserve. In the 2013 Sustainability Report, Imperial explains that tight security, base stations and tracking allows rangers to monitor the rhinoceros constantly. Imperial are also funding a new initiative to fit transmitters into the horns of rhinoceros which send out a distress signal if the animal's movements are abnormal or irregular.

Dealing with extinction more broadly, BHP Billiton plc state unequivocally that, "We will not be operating where there is a risk of direct impacts to ecosystems that could result in the extinction of an IUCN Red List Threatened Species in the wild" (Sustainability Report, 2014, p.29). This is a strong commitment whose disclosure creates a reality where the company would, theoretically at least, forego profitable opportunities and projects to prevent extinction of any threatened species.[17]

Finally, it was interesting to note that some of the extinction-related disclosures suggest that customers (as an important stakeholder group), as well as the companies, are required to take action. For example, with the MyPlanet card, Woolworths is tapping into societal concern in order to develop their reputation for conserving the rhinoceros, as they commented,

[17] This statement does, however, raise questions about how this disclosure could be audited and assured?

"Woolworths customers proved in a big way that they are not prepared to settle for the 'Big 4'" (Good Business Journey Report, 2012, p.67).

Business Case Incentive for Rhinoceros Protection and Conservation

In addition to evidence supporting an ethical and cultural incentive for South African companies to engage in initiatives and campaigns to conserve and protect rhinoceros, there is a clear business case, especially for the eco-tourism industry. Remgro, originally a tobacco company (founded in the 1940s by Dr Anton Rupert) is now an investment house. In their business model, discussed on the company's website, they explain that,

> "As a shareholder of the investee companies, Remgro also exercises its shareholder rights to ensure as far as possible that the entities concerned adhere to its requirements in respect of matters such as governance, internal controls, financial management, risk management, legal compliance, safety, health and environmental management, internal audit, ethics management, information management, stakeholder relationships and sustainability".

It seems that Remgro focuses on a responsible investment strategy. The company has a specific interest in SANParks and in conservation due to the founding of the Peace Parks Foundation (PPF) by the company's founder Dr. Anton Rupert (working with Dr Nelson Mandela and Prince Bernhard of the Netherlands). The aim of the PPF was to manager the country's natural resources so as to increase socio-economic development opportunities through eco-tourism. Remgro discuss the threat to South Africa's competitive advantage in ecotourism due to a marked increase in wildlife crime, especially rhinoceros poaching.

Similarly, there is strong evidence from Exxaro's disclosure of a business case for rhinoceros protection and conservation,

> "We believe conservation is becoming increasingly important, given the enormous value of biodiversity and tourism to the South African economy. Accordingly, we

> intend to be a mining company that leads by example in protecting, enhancing and conserving the country's biodiversity and demonstrating that mining activities can co-exist with world-class biodiversity conservation initiatives. That way, we ensure the right of future generations to a healthy, complete and rich environment. Various conservation measures are being implemented that underscore Exxaro's commitment to entrench duty-of-care principles" (Integrated Report, 2012, p.120).

We can see from these illustrations that, despite emergence of possibly ethically driven and more genuine 'extinction accounting', there remain elements of a more self-serving form of disclosure based on corporate reputation and impression management as well as an eco-tourism business case.

6.2: Developing an extinction accounting framework

The companies under review are providing information on different biodiversity metrics and, in particular, details on IUCN Red List species affected by their operations. They also include some detail on conservation initiatives with they support.

This points to only a basic-level of sustainability awareness and disclosure (see Grabsch et al, 2012; van Liempd and Busch, 2013). Biodiversity reporting and GRI disclosures can be seen as part of a process of impression management. The organisations under review are including at least some information on rhinoceros conservation in their annual, integrated or sustainability reports to address societal expectations and appear to be concerned about the possible extinction of the species. Extinction accounting goes beyond this biodiversity or general conservation discourse. It reveals, albeit subtly, the possibility of an emancipatory type of accounting which is characterised by a belief in the need to save the rhinoceros on deep ecological grounds and ensure that substantive steps are taken to deal with the risk of extinction (as a specific sustainability consideration)[18] whilst acknowledging the reporter's potential to make a difference.

[18] Special thanks to one of our reviewers for helping to articulate this point.

As discussed in Section 2 and Section 3.2, biodiversity reporting is often descriptive and superficial. The information is seldom integrated with explanations of how the reporting entity develops its strategy, manages risks and monitors different elements of performance (see, for example, Tregidga, 2013; van Liempd and Busch, 2013; Samkin et al, 2014; Mansoor and Maroun, 2016). Alternatively, 'biodiversity' is understood in purely anthropocentric terms. It is presented as an element of financial risk management rather than a sincere commitment to minimising the effects on the ecosystem (Atkins et al, 2014). In contrast, reporting on the plight of the rhinoceros involves a different perspective.

The examples in Section 6.1 provide evidence of companies appreciating the beauty of the animal and its cultural relevance. In the authors' views, this points to deep ecological framing. There is a sense that species must be preserved, not because of the immediate business case, but because of the moral and social costs of failing to take immediate action as well as because of the rhinoceros' intrinsic value. The fact that none of the companies under review are engaged directly in eco-tourism reaffirms this view. In each instance, the rhinoceros is not a direct 'component' or 'element' in the respective organisations' business models weakening the anthropocentric case for championing conservation initiatives. For example, the rhinoceros does not affect a food retailer's primary activities to the same extent as issues such as climate change and sustainable agriculture. Nevertheless, one such organisation (Woolworths) goes to considerable lengths to explain the different projects it supports to combat poaching.

There is, of course, an element of image management. Companies like Woolworths and Nedbank probably benefit from the reputation of being environmentally aware. This does not, however, mean that rhinoceros-related reporting is merely an example of philanthropic accounting or impression management (see Section 3.1). There are several factors which support this view.

Firstly, rhinoceros disclosures were not limited to specific organisations or those in particular sectors. There are widespread accounts on different conservation efforts, the effects of poaching and the possibility of the species being driven to extinction. Secondly, these disclosures are more than just a basic narrative (cf Cho et al, 2015). Conservation efforts are being integrated with CSR policies and strategies and there is evidence of specific actions being taken to combat poaching. For example, and as discussed in Section 6.1, organisations are devoting financial resources *and* their technical expertise to aid government, NGO's and park rangers. This is complemented by active engagement with different stakeholders and the formation of partnerships as part of a long-term plan to support rhinoceros conservation. This is the case even when the collaborating companies would otherwise view each other as competitors. Equally important is accounting's enabling role which, as explained by Hopwood (1987), is easy to overlook.

The impressive calculative and organisational infrastructure making up the accounting systems of South Africa's large listed companies is being mobilised as part of the conservation effort. These accounting systems contribute to the public awareness of the threats posed by poaching by reporting information in integrated reports and on websites. They also provide the means for individuals to contribute to tackling poaching, whether by investing in particular financial instruments (Nedbank), purchasing special shopping bags (Woolworths) or following a particular blog (Standardbank) in order to raise funds for conservation. In several cases material amounts of money are being raised and significant time and effort is being invested in the environmental project implying that there is more at work than just impression management and philanthropic accounting (cf Solomon et al, 2013; Cho et al, 2015).

Finally, the researchers reflected on the tone of the corporate reports. As discussed in Section 6.1, there were several examples of shock and outrage at the prospect of one of the Big Five being driven into extinction. This went hand-in-hand with suggestions that companies are morally obligated to act, even though they are not directly responsible for poaching and the rhinoceros is not a material financial consideration: they may not be directly responsible but they are acknowledging an ability to influence the creature's survival. Equally important were examples calling on stakeholders (most often customers) to support different corporate projects aimed at protecting the rhinoceros.

In the authors' opinion, the indicators discussed above provided clear evidence of an emerging form of accounting. This new type of 'accounting' is shifting organisational boundaries. South African companies are clearly reacting to possible extinction of a specific species. Organisational discourse is changing. The companies under review are not only discussing financial considerations but advocating a deep ecological stance on rhinoceros conservation aligned with a social narrative demanding the protection of the species. In this way, 'extinction accounting' raises awareness of the risk of a specie's extinction (see Gray et al, 1995), provides evidence of specific corporate actions in response to that risk (see Cho et al, 2015) and mobilises a broad group of stakeholders in an effort to prevent the species being wiped out (see Atkins et al, 2014). The essential features of 'extinction accounting' and how this accounting differs from biodiversity or philanthropic accounting is summarised in Figure 2.

Figure 2

Views of Researchers on Accounting for Biodiversity, Philanthropy and Extinction

	Accounting for Biodiversity	**Philanthropic Accounting**	**Extinction Accounting**
Motivation	Business case scenario Financial risk management Environmental governance Internal control	Reputation risk management Cosmetic accounting Impression management	Heritage Genuine desire to prevent species extinction Shock at extinction risk – especially of a key, visible species (rhino for example as a 'special case'
Content	Focus on show casing best practice Focused on financial risks and risk management	Focused on financial quantity of corporate giving	Emotional language and impassioned discussion of species extinction and efforts to prevent extinction Setting a moral high ground and an ethical stance Evidence of specific action A call to arms

Rather than develop an independent reporting framework, the authors use existing GRI principles as a starting point to ground extinction accounting in an existing discourse which is already well-understood and generally accepted. A potential schematic could include details on different species impacted by an organisation's activities and the risk of extinction as currently recommended by the GRI and IUCN. The framework must also take into consideration the guidance provided by the integrated reporting initiative. In addition to factual reporting on species, a company should strive to demonstrate an interconnection between the risk of extinction, action plans and the evaluation of how its policies, plans and actions are appropriate for addressing that risk.

In particular, an emergent extinction accounting framework should recognise the need for an iterative reporting and reflection process. The entity proposes specific plans to address corporate impact on endangered or threatened species. Consistent with the approach recommended by the IIRC (2013), this takes into account the need for stakeholder engagement to form appropriate partnerships to design and implement suitable responses. In the interest of balanced reporting, these decisions (and their results) are disclosed but, given that the reporting process should be emancipatory and engender change, the IIRC (and academic literature) stress the need for self-reflection and revision. In a general integrated reporting context, this is to ensure that organisations improve the articulation of their business models and the efficiency with which they manage different capital transformations in order to create sustainable value (Eccles and Krzus, 2010). Likewise, from the specific perspective of extinction accounting, the intention is to understand better the impact the business is having on species by recording changes, developing responses, implementing these and reflecting on and reacting to successes and failures.

A possible framework would not only offer a structured approach for organisations to conceptualise and report on the risk of extinction: it should also 'mesh' with the existing integrated reporting model and should be useful for providing a basis for meaningful reporting on environmental capital transformations as part of a broader integrated approach to corporate reporting and business management. In this paper we do not provide an explicit framework as this could limit and constrain the development and discourse surrounding a suitable extinction framework. Instead, we explore the possible elements which in a large part issue from our analysis of existing rhinoceros reporting.

7. Concluding discussion

The concept of 'extinction accounting' is introduced and discussed in this paper. It is seen as a natural extension to biodiversity accounting. 'Extinction accounting' differs from biodiversity accounting, however, in that it appears to be driven by different motivating factors. Whereas prior research has concluded that biodiversity accounting is primarily motivated by a business case scenario, impression management and enlightened shareholder value (Barone et al, 2013; Solomon et al, 2013), our findings suggest that there may be an element of genuine philanthropy at work. Further, 'extinction accounting', we feel, is one outcome of a societal shift in ecological consciousness evidenced by a growing awareness of ongoing threats to biodiversity and the harsh reality of extinction. This is especially relevant in the context of a high profile species such as the rhinoceros which is promoting a change in organisational discourse and, related to this, the focus of their stakeholder engagement.

We find that the tone and focus of corporate reports (and webpage content) is not limited to financial and economic considerations or ESG issues specific to the business model. The companies under review deal with the rhinoceros – which is not directly linked to their primary activities – in considerable detail. What is more, disclosures are not limited to descriptive accounts of poaching and conservation. There are clear examples of corporates providing direct financial and technical support and collaborating with different government agencies and NGO's to combat poaching. Partnerships of these forms are helping companies construct an ecological corporate narrative through the accounting function allowing reports to become increasingly representative of genuine rhinoceros protection and conservation as well as a desire to communicate openly and effectively with stakeholders. Perhaps most telling is the use of the entities' accounting infrastructure to enhance awareness, engage a broad group of stakeholders on the need to support conservation initiatives and provide the public with a practical means of contributing to anti-poaching measures.

Collectively, we feel that these findings show that extinction of the rhinoceros is being identified as a material issue. Companies are not simply reporting for the sake of managing impressions but to prevent the demise of this culturally and biologically important species. In other words, organisational boundaries are shifting. Economic, technological and ideological changes are being inspired by deep ecology.

Companies are contributing financial resources and providing operational support for conservation initiatives which are not part of their business models. They are collaborating with third parties which make no direct financial contribution and are even prepared to partner with their competitors in an effort to reverse the effects of poaching. As such, there is a sense of genuine concern for the plight of the species rather than an expectation that an investment in anti-poaching initiatives should generate future financial returns. This view is reaffirmed by the fact that the rhinoceros is not framed as part of a non-financial reporting compliance exercise. The rhetoric found in corporate reports reveals a passionate drive to protect the species and real anxiety about the extinction of this ecologically and culturally important animal. As a result, the role of the accounting infrastructure is changing. Articulating financial performance is still a primary consideration but companies' integrated and sustainability reports are also being mobilised to provide an 'account' of the demise of the rhinoceros and reiterate the need for an immediate response. In this way, corporate discourse and action are moving away from an anthropocentric account of the environment to one informed by a deep ecological view and aligning with the social narrative championing the need to protect the rhinoceros.

To develop this form of 'extinction accounting' further, we suggest that a reporting framework (which can be applied to social and environmental accounting) ought to be derived through a normative and social constructionist tradition. This framework takes into account the existing guidance provided by the GRI and the IIRC's integrated reporting framework. It stresses the need to report on specific extinction indicators and to draw interconnections between the risk of extinction, the reporting entity's action plans and the evaluation of how its policies are appropriate for addressing that risk. Importantly, the relationship between risk and action is not limited by the hegemony of financial capital. Instead it is grounded in a deep ecological view that the preservation of a species is a moral, social imperative. Ultimately, the aim is not to monetise extinction risk but to promote dialogue and engagement between multinational corporations and their diverse stakeholders to promote positive change.

The exact form of extinction accounting is currently a work in progress. To develop the accounting framework future research is required. We feel that to provide an explicit framework at this stage could delimit emancipatory elements, could stifle further debate and may stunt the evolution of a genuinely transformational reporting model. This study is limited to a single species in a South African context. It would be useful to explore how companies in other jurisdictions are responding to the threat of extinction. Theoretical eclecticism is also required. This study relies on guidance provided by the GRI and IIRC, coupled with the prior research on transformative accounting, to develop an extinction accounting framework. Alternate theoretical perspectives can be used to refine extinction accounting. For example, exploratory methods can be used to discover whether or not conversations between companies and their stakeholders are a type of therapeutic dialogue between the therapist (e.g. RAGE) and the patient (company) in order to recreate accounting as an emancipatory agent.[19] It is possible that extinction accounting may be fulfilling the desires and hopes of earlier researchers who promoted the notion of emancipatory accounting which enhances societal welfare and leads us to a better place. Through enhancing the tone of corporate communication and extending the scope of narrative reporting, the hegemonic power of organisations can be harnessed via the accounting function to make better social worlds.

"Rhinos have lived on Earth for more than 50 million years compared to humans' span of less than half a million. If rhinos can survive the current poaching onslaught and hang on until Mother Nature strikes back, they may well still be around in another 50 million years, long after man has caused his own destruction".

Richard Peirce, 2013, p.139

[19] See, for example, the following conference paper, Atkins et al., (2015).

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