Talking in circles. A semiotic analysis of sustainability reporting in the Swedish heavy industries

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Abstract

How publicly traded companies perform with regards to environmental sustainability is receiving increasing attention both by investors and in society in general. Annually released sustainability reports are an important tool for public companies to disclose information relating to their environmental performance. Frequently released as an integrated part of the annual financial report, sustainability reports are predominantly seen as a way for organizations to gain and maintain legitimacy with a broad range of stakeholders, while critical scholars mainly view corporate sustainability reporting as a promotion tool disguised as an objective account. In the current study, a semiotic analysis is conducted on the sustainability reports of five Swedish public companies in the environmentally sensitive heavy industry sector to critically examine how the companies use signs to construct environmental sustainability in their communication with stakeholders. Using theoretical concepts based on Ferdinand de Saussure's structural linguistics and further developed by post-structuralists Roland Barthes and Jean Baudrillard, the study finds that the studied reports contain elements of arbitrarily constructed signs that are disconnected from reality, or what Baudrillard has termed hyperreality.

Keywords: sustainability reporting, post-structuralism, semiotics, structuralism, strategic communication, hyperreality

Word count: 14.879

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1   Introduction

As the threat of climate change and rising global temperatures becomes more evident, firms in general are increasingly devoting resources to work related to environmental sustainability. This is visible not least in the financial markets, where sustainability is considered a sound long-term investment strategy by some of the world's largest asset managers, including Blackrock (2021) and J.P. Morgan (2021). So-called sustainable investments where environmental, social and governance (ESG) factors are considered when placing money amounted to over 35 trillion USD globally in 2020, a 15% increase since 2018 and accounting for more than 35% of total investments (GSIA 2021, p. 5).

The change is also being driven by governments and intergovernmental organizations. According to accounting firm KPMG (2020a), more than 500 new measures to promote ESG issues were taken by governments worldwide between 2010 and 2020. As the investments increase, so does the demand for disclosure of information that relate to firms' environmental performance. One important channel for disclosing the environmental impact of firms' activities is the sustainability report. Sustainability reports, a document released annually, disclosing non-financial information about an organization's activities related to ESG issues, have in recent years become both more frequently used and more extensive. While the financial aspects of an annual report are subject to laws and regulations as well as an external audit in order to make the financial accounts transparent, reliable and comparable for stakeholders, the practice of sustainability reporting is not subject to the same scrutiny. Common reporting frameworks and third-party assurance is a relatively new development, and the practice is not yet universally adapted. According to a KPMG survey among 5,200 large and mid-cap companies worldwide, around half used third-party assurance for their sustainability reports in 2020 (KPMG 2020b, p. 23) while two thirds reported using the guidelines or standards developed by the Global Reporting Initiative, the most commonly used framework (KPMG 2020b, p. 25). The need for a more rigid common reporting standard and third-party assurance to increase the legitimacy of corporate sustainability reporting and the possibility for financial markets and other stakeholders to assess and compare firms' sustainability activities has been raised by accounting professionals (KPMG 2020b; GRI 2020), the European Union (European Commission 2021) and academics (O'Dwyer, Owen, and Unerman 2011; Hodge, Subramaniam, and Stewart 2009).

Other scholars are more critical of the development in sustainability reporting, arguing that its primary

function is to maintain corporate image (Crowther 2012) or even conceal the truth by the dissemination of signs disconnected from reality (Boiral 2013), or what Baudrillard (1994) terms "hyperreal" signs. Building on from de Saussure's structural linguistics and semiotics, Baudrillard was mainly interested in the effects communication and information technology have on society, arguing that "[w]e live in a world where there is more and more information and less and less meaning" (Baudrillard 1994, p. 79). He saw the postmodern society as situated in an "era of simulation" where signs and symbols create endless chains of connotations, or references, that result in *simulacra* - when original and copy are indistinguishable from each other. Baudrillard's view that signs and symbols make up the dominating social order rather than material conditions is a radical one, but his concept of hyperreality has been used to explain everything from consumption (Edvardsson, Enquist, and Johnston 2005) and fashion trends (Rinallo and Golfetto 2006) to globalization (Belk 1996) and accounting (Macintosh et al. 2000).

1.1   Research problem and purpose

In this thesis, the 2019 sustainability reports of five Swedish companies in the heavy industry sector are subject of a semiotic analysis. The purpose is to find out how firms in environmentally sensitive industries construct and communicate their sustainability work to stakeholders with the sustainability report. Companies in heavy industries are often labeled as "offenders" and "worst polluters" when it comes to environmental issues (e.g. Lundberg 2020) and are thus presented with a communicative challenge when trying to legitimate their activities. Most research on communicative aspects of sustainability reports has applied a neo-institutionalist legitimacy theory perspective. In contrast, this thesis uses post-structuralism and semiotics to study how language and images are used by the companies to construct their versions of corporate environmental sustainability. As such, the thesis can contribute to the field of strategic communication by exploring how semiotic and post-structuralist theory can be applied on the genre of sustainability reports, as well as let us understand more about how Swedish firms in the heavy industries use language, images and symbols to construct a certain reality as it relates to environmental sustainability.

1.2   Aim and research questions

The thesis aims to contribute to our understanding of how corporate sustainability reports are used by companies to communicate about their activities relating to environmental sustainability by answering the following research question:

RQ.   How are signs used by the five studied companies in the Swedish heavy industry sector to construct environmental sustainability through their annual sustainability reports?

To guide and provide structure to the semiotic analysis three additional research questions have been posed.

RQa.   What signs in the reports are important for the construction of environmental sustainability?

RQb.   How do the companies construct themselves as environmentally sustainable actors?

RQc.   How do the sustainability reports relate to other texts and social constructions of environmental sustainability?

1.3   Relevance of thesis for the field of strategic communication

Strategic communication can be defined, in broad terms, as the purposeful communication by an organization in order to advance its mission (Hallahan et al. 2007, p. 4). Research on strategic communication includes, but is not limited to topics such as public relations, marketing and political communication and is intimately related to other research fields. The purpose of this thesis is to study how certain organizations - publicly traded companies in the Swedish heavy industry sector - use their sustainability reports to communicate their sustainability work to stakeholders. Sustainability reports are documents released annually mainly by large companies and organizations with the purpose - apart from being a legally required procedure for large companies in Sweden - to inform stakeholders about sustainability related activities, which in turn may increase the legitimacy and competitiveness for a company or other type of organization (Herzig and Schaltegger 2006, p. 302). The post-structuralist and semiotic perspective used in the thesis is fruitful both for its attention to how communication in the form of language, images and symbols provide meaning and for studying how the companies function as "social actors" (Hallahan et al. 2007, p. 7) in relation to other societal entities.

1.4 Delimitations

The thesis is concerned with the communicative aspects of environmental sustainability as used in corporate sustainability reports. Sustainability is a wide concept, and corporate sustainability reports cover, apart from environmental issues, a wide variety of topics including governance and anti-corruption, social issues e.g. discrimination and inclusion and human rights. The analysis is concerned only with how the studied companies communicate their *environmental* work; that is issues related to climate change, waste, pollution, biodiversity, etc. As part of the purpose of the thesis is to find out how environmental sustainability is constructed by companies, it makes little sense to try to define it beforehand.

The analysis only concerns the sustainability report documents themselves. I do not in any way try to find out whether the published content is true or false in the sense of it representing a tangible physical reality, but am only interested in how communication in the form of language, images and symbols is used to construct the concept of corporate environmental sustainability.

1.5 Structure of thesis

The thesis is constructed as follows: the next section covers the available literature on communicative aspects of sustainability reporting, focusing on the most commonly applied perspective, neo-institutionalism, and previous studies with critical and semiotic perspectives, as well as the position of the current thesis in the literature. Next the foundation of structuralism, semiotics and post-structuralism that provide the theoretical framework is described. In the methods chapter, the epistemology of post-structuralism is further expanded on, before the research design, case selection and operationalization are described to provide the reader with a good understanding with how the analysis was conducted.

The analysis chapter opens with a background section to provide the reader with the necessary context ahead of the analysis. Next, the semiotic analysis conducted at three levels of the documents - signification at the level of the text, the narrative or mythical level, and intertextual or text-external level - is described, guided by the three additional research questions. Following the analysis, the results are discussed and connected back to the review of previous research on the topic, and alternatives to the chosen approach are discussed. Lastly, the thesis is concluded with a recap of the findings in relation to the research aim and questions, and its contribution to the available literature is discussed together with suggestions for future research.

2   Literature review

This thesis is concerned with the construction of environmental sustainability through the means of language and images. With a wider scope, the issue is one of legitimacy; as climate change is becoming a more pressing issue, there is an increased demand from society for private companies to act in an environmentally sustainable manner. Sustainability reporting is one way for companies to communicate with stakeholders and legitimate their operations with regards to environmental sustainability.

2.1   Why communicating about sustainability matters: the neo-institutional perspective

In order to survive and prosper, organizations need to gain legitimacy from their external environment. They therefore "seek to establish congruence between the social values associated with or implied by their activities and the norms of acceptable behavior in the larger social system of which they are part" (Dowling and Pfeffer 1975, p. 122). As values change over time, organizations that fail to adapt may be presented with a crisis of legitimacy, potentially an existential threat. Legitimacy is therefore to be seen as "a dynamic constraint which changes as organizations adapt, and as the social values which define legitimacy change and are changed" (Dowling and Pfeffer 1975, p. 126). The neo-institutional perspective has dominated the research on legitimacy and organization studies as a whole (Alvesson and Spicer 2019, p. 199). According to the neo-institutionalist perspective, social norms, rules and shared meanings may be seen as institutions that govern organizational behavior. The definition of what constitutes an institution in the field of organization studies varies, involving "a number of complicated concepts such as 'culture', 'meaning', 'material practices', 'rules' [and] 'legitimation'" (Alvesson and Spicer 2019, p. 206). In a widely cited paper Meyer and Rowan (1977) argued that social norms that have become institutionalized rules in society work as powerful myths which organizations adopt and conform to, to the extent that myths generated from the external environment influence the formal structure of organizations to a greater degree than demands related to their work activities (Meyer and Rowan 1977, p. 341). As certain norms become increasingly institutionalized in society, more and more organizations conform to them in order to maintain and gain legitimacy. This process, labeled by DiMaggio and Powell (1983) as *institutional isomorphism*, leads to a homogenization among organizations that operate in a similar institutional context.

The development of sustainability reporting into a standard practice among private companies is intimately linked to the increased need for firms to legitimate the impact of their business on the natural environment. Environmental disasters such as the Bhopal gas leak and the Exxon Valdez oil spill together with an increased awareness of human caused climate change during the 1980's and 1990's, created an institutionalized pressure through both public opinion and new regulations (Herzig and Schaltegger 2006, pp. 306-307). In the perspective of neo-institutionalism, sustainability reporting in the form of disclosure of information that relate to environmental impact and risks concerning a company's core business "has the effect of maintaining not only firm-specific but also system-wide legitimacy" (Neu, Warsame, and Pedwell 1998, p. 266). In other words, firms have an interest in not only maintaining their own image in front of their stakeholder, but also to maintain a more general positive image of their industry (e.g. "paper mills"), geographic area (e.g. "Swedish industry") or other structure which they are part of. Neu, Warsame, and Pedwell (1998) conducted a quantitative analysis of the environmental disclosures in annual reports of 33 publicly traded Canadian companies in the mining, oil and gas, chemicals and forestry industries over a 10-year period, finding a positive correlation between media attention given to firms' receiving environmental fines and the amount of environmental disclosure in the annual report. The results highlight how firms use sustainability reports to seek legitimacy not just with its financial stakeholders, but with the general public, as well as how sustainability reporting can work as a tool for maintaining stakeholder image.

How sustainability reporting is used for managing image by companies in controversial industries, such as polluting ones, has different interpretations in the academic literature. Cai, Jo, and Pan (2012) identify three points-of-view regarding legitimacy and sustainability reporting as part of a wider engagement in corporate social responsibility (CSR): the *window-dressing hypothesis* which stipulates that companies attempt to deceive stakeholders to legitimize questionable behavior, the *value-enhancement hypothesis* which promotes the gains in transparency and accountability as value-adding mechanisms, and the *value-irrelevance hypothesis*, by which companies simply follow current trends without any clear intention towards their stakeholders, positive or negative (2012, p. 467). In their quantitative study of US firms operating in controversial industries, they found that engagement in CSR activities, including work to reduce environmental impact, has a positive effect on firm value, indicating support for the "value-enhancement hypothesis" (Cai, Jo, and Pan 2012, p. 477). An alternative explanation to the three hypotheses posed by Cai, Jo, and Pan is that organizations intend to do the best of their ability with re-

gards to environmental sustainability, but are constrained by conflicting stakeholder demands, resulting in what Brunsson (1993) calls *organized hypocrisy*. According to Brunsson, stakeholders are interested not just in the actions of an organization, but in talk and ideas as well (1993, p. 496). Conflicting stakeholder demands (e.g. between shareholders and environmental interest groups) force organizations to behave hypocritical by producing ideas that are inconsistent with ideas and compensating for their actions with talk in the opposite direction (Brunsson 1993, p. 501). Cho et al. (2015) studied the communication of energy companies Chevron and ConocoPhillips during a period of intense debate about proposed drilling for oil in a protected wilderness area in Alaska, using Brunsson's framework. While organized hypocrisy is hard to prove empirically, the authors argue that the companies present statements that seek to compensate for its actions, e.g. by iterating that its exploration for fossil fuels should not be done at the expense of the environment and that they pursue alternative, renewable energy sources for the future (Cho et al. 2015, p. 90).

Another aspect of environmental and other non-financial disclosure is the legitimacy of quantitative vs. qualitative data of annual and sustainability reports. According to Cho and Patten, monetary and quantitative data has long been regarded as more reliable than qualitative data both in financial and non-financial disclosure (2007, p. 641). In their comparison of environmental disclosure by firms operating in environmentally sensitive industries (ESI) and non-ESI firms, Cho and Patten found that among non-ESI firms worse environmental performers tend to have higher levels of qualitative, non-monetary disclosure, and among ESI firms the situation was the opposite (2007, p. 646). Another study by the same authors found that worse environmental performers tend to use more optimistic language in their sustainability disclosures, focusing on good news and using vague and uncertain language when informing of bad performances (Cho, Roberts, and Patten 2010, p. 442). While it is hard to draw any definitive conclusions from those findings, they suggest that more than the quantity of environmental disclosure matters and that the role of language should not be overlooked when we try to make sense of how private companies try to legitimize their environmental sustainability work.

2.2 Why the language about sustainability matters: critical and semiotic perspectives

While neo-institutional theory, as we saw in the review above, considers transparency as an ideal (Boiral 2013, p. 1038) and "privileges the idea that language represents reality" (Alvesson and Kärreman 2000, p. 137), some scholars of organization studies have taken what Alvesson and Kärreman (2000) call the *linguistic turn*. Instead of viewing language as a mirror-image of reality, language is seen as having the power to construct reality "in the sense that every instance of language use is to some extent arbitrary and produces a particular version of what it is supposed to represent" (Alvesson and Kärreman 2000, p. 142).

A key concept in critical studies of professional communication is that of interdiscursivity. According to Bhatia "interdiscursivity can be viewed as appropriation of semiotic resources (which may include textual, semantic, socio-pragmatic, generic, and professional) across any two or more of these different levels" (2010, p. 35). In their analysis of a sample of so-called integrated reports, where sustainability reports are published as an integrated part of the financial annual report instead of as a stand-alone document, Zappettini and Unerman (2016) find through a critical discourse analysis that companies apply this type of semiotic appropriation by using the word *sustainability* more frequently when referring to "prolonged, durable and profitable business rather than relating to social or environmental issues" (2016, p. 538).

Other studies have used semiotics and the concept of *hyperreality* to describe how the language of corporate reporting is disconnected from the material reality it is supposed to reflect. Boiral and Heras-Saizarbitoria use this approach, arguing the mainstream, neo-institutionalist perspective "reflects the ideal of transparency in sustainability reporting by assuring stakeholders that, based on a rigorous verification process, the information disclosed by organizations is deemed to be reliable, material, and consistent with the realities of their sustainability performance" (2020, p. 3). The same authors make the case that despite third-party assurance and application of common reporting standards, sustainability reporting reproduces "empty formulas largely divorced from reality but expected to artificially inflate confidence in the reliability of sustainability disclosure" (Boiral and Heras-Saizarbitoria 2020, p. 12). In other words, apart from disclosing the tangible sustainability activities of a firm, sustainability reports disperse signs and symbols through its language, images and layout that are disconnected from the "physical"

reality. In a previous study, Boiral (2013) found through a combination of quantitative content analysis and semiotics that the studied energy and gas companies disclose only 10 percent of the events that were reported in media regarding their environmental impact, emphasizing their positive achievements and external awards instead (2013, p. 1051). The study also showed how the companies extensively use images of unspoiled nature that misrepresent their actual environmental impact and instead symbolize "unspoiled nature, innocence, or caring and stewardship" (Boiral 2013, p. 1061).

2.3 Synthesis and research gap

While both neo-institutionalist and critical scholars agree on the purpose of sustainability reporting as a tool for creating legitimacy and managing stakeholder expectations, they are divided on its implications. From the perspective of neo-institutionalism, the disclosure of information related to environmental sustainability can be a driver of change. As transparency increases, so does the incentive for companies to improve their environmental performance if they wish to remain legitimate and attractive in the eyes of their stakeholders. From the critical perspective, this is an idealized image of corporate disclosure. Companies may use the inherent legitimacy of corporate disclosure as something that is taken for an objective account of actual events to promote their interests.

This thesis takes a critical perspective on how communication can be used to construct corporate environmental sustainability, with the notion that "language is never innocent" (Barthes 1977, p. 16). While this means that a critical analysis of the selected sustainability reports is necessary, it does not mean that the positive aspects of sustainability reporting that the neo-institutionalist perspective stipulates are incomprehensible in the scope of the analysis. It means that language and other semiotic resources cannot be taken at face value and must be critically examined. The two studies in the review above that are most similar to the current thesis are the ones by Boiral (2013) and Boiral and Heras-Saizarbitoria (2020). Whereas those studies used large samples for empirical analyses with quantitative elements that revealed the disclosures' level of transparency, this is an effort more focused on the communicative aspects of corporate sustainability and with a small sample to apply a close reading of the texts using a semiotic analysis. By doing so, I hope to contribute to the understanding of how environmental sustainability is constructed in the context of corporate sustainability reports.

3 Theory

In the following section, I describe and explain the theoretical background on which the analysis is based. The purpose is not only to provide the reader with an understanding of the theoretical concepts used in the analysis. First, the foundations of structuralism and semiotics are described. This is followed by an explanation of the development into post-structuralism, focusing on Roland Barthes' concept of myth and Jean Baudrillard's concept of hyperreality.

3.1 Structuralism and 'the science of signs'

Structuralism is a school of thought that defied the view of the world as made up of independent objects that can be analyzed individually, and instead concerns itself with the perception and description of structures (Hawkes 2003, p. 6). A structure can be defined as an arrangement of entities that is embodied by *wholeness*, *transformation* and *self-regulation* (Hawkes 2003, p. 5). The idea of wholeness can be explained by the structure being larger than the sum of its parts; the meaning and nature of each part comes from it being part of the structure, and does not exist outside of it. The transforming feature means that the structure is not static. The structure of language, for instance, is constantly changing with new expressions resulting from new experiences. And it is self-regulating in the sense that it is sealed off from other structures and does not appeal to any 'reality' beyond its own borders (Hawkes 2003, pp. 5-6). With this definition of structures and the parts they consist of comes a distinct way of seeing the world. It is not the individual objects that matter, but the *relationships* between them. This view allows for a more systematic approach in studies of language and communication, and as described below it was in the field of linguistics that structuralism gained its prominence in the beginning of the 20th century.

Contemporary structuralism is based on the 1906-1911 lectures of Swiss linguist Ferdinand de Saussure (1857-1913). Saussure favors a relational view of language - it is something that is experienced and impossible to understand without seeing it as part of a structure (Hawkes 2003, pp. 8-9). Linguistic structure is a social product of language, "a body of necessary conventions adopted by society to enable members of society to use their language faculty" (Saussure 1986, p. 10). Saussure makes a distinction between *langue*, or what is referred to as language, and *parole*, everyday speech, arguing that the ability to construct a language - "a system of distinct signs corresponding to distinct ideas" - is natural to mankind (Saussure 1986, p. 10). According to Saussure, the sign is a unit with two intimately connected

aspects. The *signified* refers to the psychological concept of a word and the *signifier* is the sound-image, or expression, of that content (Saussure 1986, p. 67). Saussure uses the example of a tree, arguing that the word "tree" (signifier) is only given meaning when we think of the concept "tree" (signified) when reading or hearing the word. The relationship between content and expression, and therefore the linguistic sign as a whole, is arbitrary (Saussure 1986, p. 67). This is because signs are not created based
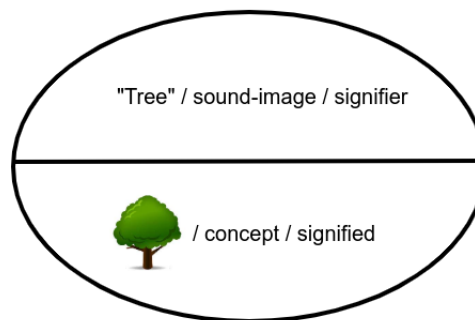

Fig. 1: Saussure's model of the sign.

on how the sound of the word "fits" to the concept it represents, instead they are just there as part of the language. The arbitrariness of the sign means that language is self-regulating and self-defining; with new experiences follow new expressions, creating a system of signs that constitutes its own reality, and a "relational" structure whose parts bear no meaning if not studied in the context of its surroundings (Hawkes 2003, p. 14). As structuralism is concerned with signs as parts of structures, it follows that the differences between those parts are essential. Habits and expectations among the individuals that speak the language help them to differentiate between signs and thus interpret the messages (Saussure 1986, p. 102). In a similar way, the absence of certain words are equally important as those that are present (Hawkes 2003, p. 15). Relationships between signs that are constituted by their differences are called *paradigmatic* (Prasad 2018, p. 113). But signs are not only understood as what they are not; their meaning can also be derived from its associations with other signs. An associative relationship between signs is termed *syntagmatic*, referring to the consequential order of signs (*syntagmas*) that make up sentences and discourse of everyday language (Saussure 1986, p. 170). Not all signs fit together, as the meaning is dependent on the particular system that a sign is a member of.

Saussure labeled his "science of signs" *semiology* (Saussure 1986, p. 15), but the term more widely

used in the English speaking world is *semiotics* (Hawkes 2003, p. 101). American linguist Charles Sanders Peirce (1839-1914), who coined the term around the same time Saussure was giving his lectures in Europe, considered semiotics to be inseparable from logic, as logic is fundamentally based on "definitions and divisions" (Peirce 1931-1958, para. 3.149) that are ultimately derived from the nature and functions of signs (Hawkes 2003, p. 103). Peirce used the term *representamen* to describe a sign, that is "something which stands to somebody for something in some respect or capacity" (Peirce 1931-1958, para. 2.228). The thing that it represents, or signifies, is labeled *object.* The two terms are thus similar to Saussure's signifier and signified, but Peirce's semiotic model has a third component which diverts from the dyadic model of Saussure. The *interpretant* is a second sign that is created in the mind of the receiver when interpreting the first sign. By virtue of being a sign, albeit a purely mental one, the interpretant sign will have its own interpretant, creating a third sign and so on (Burch 2021). The process of signs
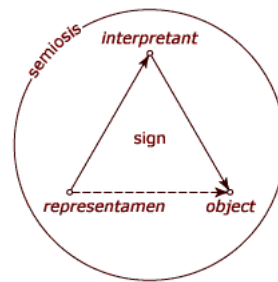
Fig. 2: Peirce's model of the sign (Dahlstrom and Somayaji 2003).

re-generating signs depending on the triadic relationship between representamen, object and interpretant is called *semiosis* and is essentially infinite, as all signs have interpretants and all interpretants are signs, creating a chain of signs without end. Here we can note a distinct difference between Saussure and Peirce: where Saussure sees a linear, stable relationship between signifier and signified, Peirce's model is dynamic without a final point of stabilization in the process of semiosis. Peirce has a pragmatic approach to his model, by which he stipulates that the respective relationships between representamen and object on one hand and interpretant and object on the other, will never be quite alike in real-life situations, but through habit and common understanding, the mental state created by the interpretant will be similar enough to the representamen to make communication function properly.

French-Lithuanian literary scientist A. J. Greimas (1917-1992) built on from Saussure's dyadic model of the sign in his theory of structural narratology. Greimas focused further on our perception of differ-

ences, arguing that binary oppositions help us decipher meaning from utterances. In what he called the *elementary structure of signification*, Greimas describes a 'semiotic square'; a model of four terms in two opposed pairs that constitute both each others opposites and negations (Greimas 1977, p. 25). In the example of *white vs. black*, Greimas argues, we understand white not just on its own, but also as the opposite to black. In fact, the relationship between signs may be categorized into three types: contrary (white/black), contradictory (white/non-white) and complementary or implicatory (white/non-black) (Greimas and Rastier 1968, p. 90). The opposite relationships between signs form a deep-lying, elementary structure common for all narratives that take different forms on the surface level. Thus, it is an understanding similar to Saussure's notion of *langue* as the underlying basis of *parole*; the structure of language is intimately connected with the structures of the stories we tell (Hawkes 2003, p. 70). Greimas calls this elementary structure a *narrative grammar*, a pattern of the conflict between individual freedom and preexisting conditions that constrain the choices of an individual.
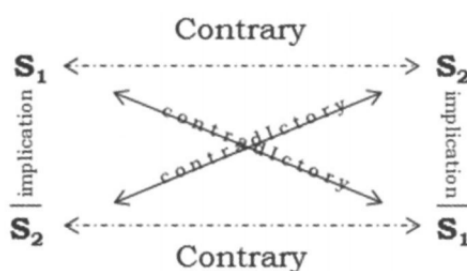
Fig. 3: Greimas' semiotic square (Corso 2014, p. 71).

3.2 Post-structuralism

According to Greimas, an author is "a producer of semiotic signs [who] operates in an epistemy, which is the resultant of of his individuality and the society in which he is situated" (Greimas and Rastier 1968, p. 103). In other words, how the manifestations of signs are realized on the surface level is dependent on a *common sense*, a social component that is positioned outside the linguistic sign system. Proponents of what came to be called the post-structuralist paradigm in the 1960's and 70's, including Jacques Derrida and Roland Barthes, began questioning the structuralist view of a universal pattern common to all stories, arguing that such an understanding renders analysis of individual works pointless (Belsey 2002, p. 43).

Derrida (1930-2004) takes particular aim at Saussure's notion of spoken language (*parole*) being, in contrast to writing, more original and innocent on the merit of being closer to the thought and, consequently, to a "true" meaning (Belsey 2002, p. 77). Derrida calls the favoring of speech *logocentrism* and argues that the logocentric understanding of writing as being "merely reflective of speech, with speech being implicitly privileged" (Prasad 2018, p. 271) fools the reader that there is a true origin of the meaning. The reader is able to *make sense* of written text even though the writer is absent, demonstrating that there is no single true meaning derived straight from the consciousness of the writer (Belsey 2002, p. 78).

Barthes (1915-1980) takes the dyadic model of Saussure and adds the concept of *myth*, arguing that the sign (made up of the relationship between signified and signifier) becomes a second order signifier to the myth it represents (Barthes 1972, p. 114). According to Barthes, myth is a *metalanguage*, as "it is a second language, *in which* one speaks about the first" (Barthes 1972, p. 115), that is not limited to linguistic signs, but may include words as well as images, objects, rituals, etc. Myth is therefore a dual concept: it is both the last term of the semiological chain on the language plane, where its signifier can be understood as *meaning*, and the myth itself, which is when the signified takes *form* through the signifier, and "makes us understand something and [...] imposes it on us" (Barthes 1972, p. 117). When understood as meaning, signifiers are full of context and value, but as myth, they lose this value, becoming empty and artificial. As myth is "defined by its intention" (Barthes 1972, p. 124), once that intention is deciphered by the analyst, it can also be seen as an *alibi* with the purpose to distort the meaning and turn it into an empty gesture. In *Myth Today*, published originally in 1957, Barthes famously gives the example

Fig. 4: Barthes' model of myth (Barthes 1972, p. 115).

of an image of a young Black soldier giving a military salute dressed in French uniform. As meaning, the signifier of the African soldier saluting the French flag is full of historical ideology, colonialism and militarism, but as soon as it takes the form of myth in our minds, when we understand the intention of the signified through the signifier, it becomes an alibi, shattering the myth "by the obviousness of its motivation" (Barthes 1972, p. 129), in this case to portray and celebrate the inclusion of its colonized populations into a "Frenchness" full of pride and devotion. The myth thus serves the purpose to distort

the meaning that is embedded in context and ideology, thereby depoliticizing it.

Barthes' description of signs as myths may also be understood with the concept of *denotation* and *connotation*. Denotation is the literal meaning of a sign (e.g. the definition of a word given in a dictionary), and connotation is the associative meaning created in the mind of the interpreter. In other words, connotation is when signifiers refer to other signifiers, producing *signification* on the level of the metalanguage. Together, Barthes argues, denotation and connotation produce ideology as the denotative meaning appears as common sense, given by nature, when it is understood through the connotation. Like many other critical theorists in the mid-late 20th century, Barthes saw this ideology-producing use of language as a way to uphold and naturalize bourgeois values. Jean Baudrillard (1929-2007), another French theorist associated with post-structuralism and postmodernism, was influenced by Barthes and considered denotation to never be "anything more than the most attractive and subtle of connotations" (Baudrillard 1988b, p. 89). This view questions the existence of a "literal" meaning and illuminates the consequences of the self-referential sign system. Because, if the denotation which the connotation is in reference to is a result of ideology and social convention itself, there is no "starting point" to discover any natural or literal meaning. According to Baudrillard, the distinction between denotation and connotation is ideological in the same way that the pricing logic of goods and services on capitalist markets is ideological; the use value, or utility, of an object has the appearance of an objective value, but is regulated by its exchange value, or price, while simultaneously rationalizing the latter through its "naturalist" alibi (Baudrillard 1988b, p. 87). In this way, Baudrillard connects semiotics with the social interaction of everyday life and capitalism as the dominating ideology of modern society.

Although inspired by Marx in his earlier work, Baudrillard came to reject how both capitalism and Marxism puts production at the center of society (Kellner 2020). Instead, the postmodern society is characterized by "the era of simulation" (Baudrillard 1988a, p. 128), meaning that class, labor and production have been replaced by signs and symbols as the main social order. In a state of simulation, there is no division between true or false, or relationships of binary oppositions as stipulated by Greimas. Baudrillard makes an important distinction between *simulation* and *pretending*, quoting Émile Littré: "Whoever fakes an illness can simply stay in bed and make everyone believe he is ill. Whoever simulates an illness produces in himself some of the symptoms"[1] (Baudrillard 1994, p. 3). The simulator is

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[1] In the case of this student, the better analogy may be that he can simply pretend to be tediously working on his thesis by spending time in front of the computer with open books on his desk, but if simulation is in play, he would also experience all the symptoms of a student facing a deadline: fatigue, stress, anxiety, etc.

neither ill or not ill, says Baudrillard, and cannot be treated according to an objective nature of the disease. The self-referentiality of the sign system means that signs do not represent what is "real" - they produce it. This is what Baudrillard terms *hyperreality*: "a real without origin or reality" (Baudrillard 1994, p. 1). Baudrillard's most famous examples of hyperreality is Disneyland, an amusement park which presents itself as imaginary and as a binary opposition to the "real" world outside of its walls. But the city of Los Angeles, where Disneyland is located, California and much of the USA belong to the same hyperreal order, says Baudrillard, where the difference between "real" and "imaginary" are indistinguishable (Baudrillard 1994, pp. 12-13). Through advertising, popular culture and an overflow of information in the media about what America *is*, the image of America has become more real than the actual America. At this point, distinguishing between the fairyland and the real country is no longer possible. Signs have four successive phases in their relation to reality according to Baudrillard:

it is the reflection of a profound reality;

it masks and denatures a profound reality;

it masks the *absence* of a profound reality;

it has no relation to any reality whatsoever: it is its own pure simulacrum. (Baudrillard 1994,

p. 6)

In the first two phases, the signs represent *something* that is real, even if it is obscured in the second phase. In these phases, the copy is clearly distinguishable from the original. In the third phase, the sign points at something with which its relationship is solely arbitrary. It is a copy without original. In the fourth phase, the sign is merely a representation of other signs, constituting its own (hyper)reality where it no longer makes sense to separate between copy and original, or true and false. The term *simulacrum* refers to this condition where the difference between copy and original is indistinguishable, and with an endless proliferation of simulacra follows a disconnection from the material reality. When this occurs, we have entered the realm of hyperreality.

Like Barthes before him, Baudrillard attempts to explain political, economical and ideological phenomena of contemporary society through the means of semiotics and language. Based on Saussure's model of the dyadic sign Baudrillard's theory of hyperreality and simulation is essentially a theory of communication. An important point to make is that Baudrillard does not deny the existence of real elements in life; the artificial will always become mixed up with the real (Baudrillard 1994, p. 20).

According to Baudrillard, the era of simulation is characterized by "more and more information, and less and less meaning" (Baudrillard 1994, p. 79). With a profound interest in information technology, Baudrillard saw how new communication channels flood the individual in postmodern society with signs that do not refer to any material reality, to the point where the signs representing the imaginary are experienced instead of the physical reality. Hence, Baudrillard's theory as it is applied in this thesis is concerned only with the way signs are used to construct what is experienced as real.

4 Methodology

In this section, the epistemological tenets of post-structuralism are further expanded on, before the thesis' research design as a case study of corporate sustainability reports is described. The reader is given a background to the empirical material subject to the analysis and how the selection was made. Further, the strategy for the semiotic analysis and operationalization of three analytical levels is described before the section is closed with a a discussion regarding the robustness of the study.

4.1 Epistemology

This thesis is based in the post-structuralist epistemological paradigm. As explained in the theory section, post-structuralism is concerned with language and what it *does* (Belsey 2002, p. 71). As such, the level of analysis is the text itself and the focus of the analysis is on how signs present in the sustainability reports are used to construct a certain reality with sustainability as a dominating pattern. In other words, the purpose of the analysis is to discover and dissect signs that show a "growing disconnect between reality and its representations" (Boiral 2013, p. 1042). According to Baudrillard, this disconnect is produced through a self-referential language system, where signs merely refer to other signs.

The assumption that different realities in fact exist and are constructed through social interaction is more associated with postmodernism than with post-structuralism, two schools of thought that according to Prasad (2018, p. 264) often get clubbed together from lack of better knowing. Alvesson (2003, p. 31) is of the contrary opinion, that postmodernism and post-structuralism share the wider epistemological assumptions and mainly differ in their focus, with postmodernism more concerned with cultural critique and post-structuralism with language, discourse, meaning and symbols. This is certainly true for Baudrillard, who, as noted by Kellner (2020), follows a post-structuralist tradition in his view of language as the producer of subjectivity, drawing from Saussure's structural semiology, but who also spent a lot of time describing and analyzing what he saw as characteristics of the postmodern society.

4.2 Research design

The study is a qualitative content analysis in the form of a multiple-case study, where the studied documents have been read "through the lens" of the theoretical concepts described in the theory chapter and further elaborated on in 4.2.2. A qualitative method is the most fitting given the purpose of the thesis,

which is to find out how large Swedish companies in the heavy industry sector use symbols and signs to communicate their activities around sustainability to their stakeholders through the sustainability report, that is not possible to discover through a quantitative method. The "case" or unit of analysis is thus the sustainability reports themselves, rather than the wider sustainability agenda of the companies, which would require other sources of data and divert from the purpose of the thesis.

The research method is to a large degree determined by the semiotic perspective of the thesis. Semiotics is a way to treat language as a system of signs, where the signs "acquire meaning only in terms of their relationships with other signs in the same system" (Prasad 2018, p. 112). To identify what meaning is acquired - or in other words, how it is constructed - regarding environmental sustainability in the studied documents, semiotics is a fitting method as it is a way to discover "a hidden structural reality" in communication (Prasad 2018, p. 122).

The empirical material (further described in 4.2.1) subject to analysis is publicly available sustainability reports that have been downloaded from each company's website. Documents are one of the most common source of data when conducting qualitative case studies (Yin 2009, p. 101). When working with documents for a case study, the analyst takes the role of an observer that must understand the purpose of the document and in what context it has been published (Yin 2009, p. 105). To provide structure to the analysis, a three-step method for document analysis as described by Bowen (2009, p. 32) was used: skimming or superficial examination, reading or thorough examination, and interpretation of the contents with the help of the chosen theoretical concepts. A thematic analysis, where data is sorted and categorized into themes is a useful way to "uncover themes pertinent to a phenomenon" (Bowen 2009, p. 32).

4.2.1 Case selection criteria and data selection

The analysis is limited to the study of a specific genre of text documents, namely sustainability reports. The sustainability reports chosen to be analyses are published by five Swedish companies in 2020, covering the activities of the respective companies in the calendar year 2019. The five companies are publicly traded on the Nasdaq Stockholm Stock Exchange and are listed in the Nordic Large Cap segment. The companies are all operating in the heavy industry sector, which can be defined as an "industry that uses large machines to produce either materials, such as steel, or large goods, such as ships or trains" (Cambridge Dictionairy 2021). See table 1 for a list of the studied companies and their respective industry.

The specific companies were chosen purposefully for their representation of five different industries in

Company	2019 revenue	Industry	Report structure	Pages
Boliden	50 billion SEK	Mining	Integrated	124
Lundin Petroleum	3 billion USD	Oil/gas	Stand-alone	46
SCA	20 billion SEK	Pulp/paper	Integrated	168
SSAB	76 billion SEK	Steel	Integrated	242
Trelleborg	37 billion SEK	Polymers	Stand-alone	54

Tab. 1: Studied companies, 2019 revenue, respective industry, type of sustainability report and length in pages.

the heavy industry sector.

The reason for focusing on companies in the heavy industry sector is the energy-intensive and/or polluting nature of those activities. The selected industries also correspond to the selection made in at least one previous study on environmentally sensitive industries (Cho and Patten 2007). Companies in the heavy industry often end up on lists of "worst polluters" (e.g. Lundberg 2020) and could therefore be likely to have more difficulties when trying to frame themselves as environmentally sustainable. At the same time, many companies in the heavy industry sector provide goods and services that are essential to society and could not easily be abstained from. This includes the extraction of raw materials from mines and forests, production of steel and other construction materials, the chemical and polymer industry, energy etc. In contrast to other more consumer-oriented industries, such as food or fashion, both consumers and investors are faced with less choice between competitors, presenting a different type of narrative of how these companies communicate with their stakeholders with regards to sustainability issues.

Furthermore, public companies have a broad range of stakeholders that hold them accountable for their sustainability activities, including investors, customers, media and politicians. As discussed in the opening section, large companies are required to publish sustainability reports annually, but the contents and structure of the sustainability reports are to a high degree up for each company to decide. The sustainability report, whether it is published as a stand-alone document or as an integrated part of the full annual report, is an important part of how the companies communicate with their stakeholders. Although quarterly reports have a stronger impact on investment decisions (Kraus and Strömsten 2012, p. 197), annual and sustainability reports are a key part of companies' strategic decisions (Finansinspektionen 2020, p. 7).

4.2.2 Analytical strategy and operationalization

The aim of the thesis is to study how signs and symbols in the sustainability reports are used to construct a certain reality with regards to sustainability. The main research question is:

RQ.   How are signs used by the five studied companies in the Swedish heavy industry sector to construct environmental sustainability through their annual sustainability reports?

To help answer this question through the means of applying the theoretical framework on the studied documents, three additional questions were posed. The additional questions provide a structure for three different levels of analysis: at the level of the individual signs in the text, at the narrative or mythical level, and at the intertextual or text-external level. Before I go into how each level of analysis was operationalized, I describe the general analytical strategy.

As the study only is concerned with signs related to the construction of environmental sustainability, the first step of the analysis was to read the reports several times over and highlight the sections, sentences, words, symbols and images that deal with environmental sustainability. This was especially important for the documents which had the sustainability reports integrated in the full annual report, but also the stand-alone sustainability reports include topics not related to environmental issues, such as social responsibility and equality, and therefore are exempt from the analysis. After collecting all relevant parts of the reports, the material was further inspected through the lens of semiotics. In more practical terms, I looked for signs that were indicative of the companies using cultural references belonging to the paradigm of sustainability in order to describe, evaluate and legitimate their sustainability work. Building on from Saussure's dyadic model of the sign, I looked for the notion of signs being defined of what they are *not*, i.e. their paradigmatic relationships with other signs, as well as in which context or sign system they present themselves in, i.e. their syntagmatic or associative relationships with other signs. My interpretation of the signification processes of the identified signs is also described by their connotative values.

Furthermore, I paid attention to the self-referentiality of the sign system; that is whether the signs' points of references are situated in- or outside of the context of corporate sustainability reporting, and what possible consequences such self-referentiality could have. At this point of the analysis, Baudrillard's concept of hyperreality was used to interpret the processes of signification to see if the signs are connected to a physical, material reality or if they might be considered simulacra.

The additional research questions serving as guide to three analytical levels were:

RQa.   What signs in the reports are important for the construction of environmental sustainability?

This question is concerned with signs at the level of the text: language, symbols and images including photographs and illustrations that tell the reader how the companies see and make sense of environmental sustainability. Apart from identifying the signs at the level of the text, I interpret their signification by discussing culturally rooted connotations and their relationships with other signs.

RQb.   How do the companies construct themselves as environmentally sustainable actors?

This question is concerned with the construction of sustainability at the narrative, or mythical, level. At this level the context in which signs appear is more important, as I am interested in how the companies use the sustainability report to construct themselves as environmentally sustainable actors. To find this out, it is important to note how the companies describe themselves in relation to their environment, i.e. as social actors. Interdiscursivity as described by Bhatia becomes an important concept at this level of analysis, as it is a way of "appropriating or exploiting established conventions or resources associated with other genres and practices" (2010, p. 35), something that similar studies has shown to occur (see review of Zappettini and Unerman (2016) in section 2.2).

RQc.   How do the sustainability reports relate to other texts of corporate environmental sustainability?

This question concerns how the companies use intertextual and text-external references related to environmental sustainability in their reports. Bhatia (2010, p. 35) describes intertextuality as referring to "the use of prior texts transforming the past into the present often in relatively conventionalized and somewhat standardized ways", and text-external resources as "generic conventions" of specific disciplinary cultures. In other words, I look for signs that refer to either sustainability reports published in previous years, or to other points of reference that share the convention of corporate environmental sustainability, but are situated outside the sustainability report.

4.3   Robustness of study

As is clear from the above description of the analytical strategy and operationalization applied, the analysis is to a large degree dependent on the subjective interpretations by me as an analyst. Consequently,

this means that the traditional positivist research standards of reliability and validity must be considered low for the study. While this may be considered a severe weakness of the study, the nature of the post-structuralist research tradition largely makes it incompatible with those criteria (Prasad 2018, p. 9). This does not, however, mean that the analyst can simply present their own thoughts and ideas and call it "analysis". Rather, it demands that the reasoning behind the interpretation is presented as clear and coherent as possible, so that the reader can reach their own conclusions about the result of the study. While the problem is somehow mitigated in the current study due to the public availability and relative brevity of the empirical material, the mentioned criteria certainly apply. Hence, my goal is to present a "coherent and plausible narrative" (Prasad 2018, p. 9) that could serve as reflection of the uncertainty of questions rather than attempt to deliver the finality of answers (Belsey 2002, p. 107).

Another common problem associated with qualitative case-studies in general is what Siggelkow (2007, p. 23) calls *ex post obviousness*, meaning that the findings of the study are obvious for the reader even before reading the analysis. This problem can be mitigated by posing open research questions that have more than one possible answer and the analyst discussing alternative explanations for the studied phenomenon than those provided by the chosen theoretical concepts.

5 Analysis

In the following section, the semiotic analysis and my interpretation of the findings is presented. Before the analysis gets underway, the reader is given a contextual background, covering the institutional framework and common standards of sustainability reporting, short presentations of the selected companies with attention to the environmental impact of their respective industry, a description of the communicative situation and lastly a description of the differences between the integrated and stand-alone sustainability reports. The section is then continued with the analysis guided by the additional research questions, providing structure for the analysis at the level of the sign, the narrative or mythical level, and at the intertextual or text-external level.

5.1 Contextual background

5.1.1 Institutional framework for sustainability reporting in Sweden

Swedish Annual Accounts Act

The framework for the sustainability reporting of Swedish companies is established by the Annual Accounts Act *(Årsredovisningslagen,* ÅRL) (SFS 1995:1554). After the European Union Non-Financial Reporting Directive (Directive 2014/95/EU), ÅRL was amended to require firms that on average over the past two fiscal years have had at least 250 employees, at least 175 million SEK in reported assets, or net sales of at least 350 million SEK to present a sustainability report either as an integrated part of the annual report, or as a separate document published in conjunction with the annual report (6 ch. § 11 Årsredovisningslagen, SFS 2016:947). The sustainability report should cover the following topics:

- Environment

- Social conditions

- Personnel

- Respect for human rights

- Anti-corruption (6 ch. 12 § Årsredovisningslagen, SFS 2016:947)

The sustainability report should inform about the company business model, policies regarding the aforementioned topics, policy outcomes, material risks and risk management as well as relevant key perfor-

mance indicators (6 ch. 12 § Årsredovisningslagen, SFS 2016:947). Apart from these criteria, there are no formal rules for the structure or content of the sustainability reports.

GRI standards

Global Reporting Initiative (GRI) is an independent organization that was funded in 1997 with the aim to improve companies' accountability and transparency regarding their environmental impact (GRI 2021). GRI has developed standards for sustainability reporting that are the world's most widely used (KPMG 2020b, p. 25). The standards, which companies can choose to apply at various levels that differ in level of detail, include indicators for environmental compliance, biodiversity, anti-corruption, energy, etc. The voluntary application of detailed and extensive standards such as GRI has become more frequent and has "reinforced the prevailing optimism about the relevance, rigor and relative transparency of sustainability reports" (Boiral 2013, p. 1039).

A key concept of the GRI standards is that of materiality. Materiality analysis in both a financial and sustainability context involves identifying the most "salient aspects of performance that are most relevant for report readers" (Etzion and Ferraro 2010, p. 1103). It was included in the GRI standards in 2002 as a reaction to an overflow of disclosed information in corporate sustainability reports around the time (Etzion and Ferraro 2010, p. 1103). In the context of sustainability reports, materiality analysis is most often conducted with the help of a matrix where the level of stakeholder concern for a particular issue is plotted on one axis and the level of impact for the company is plotted on the other axis, allowing the reporter to determine the issue's materiality (Etzion and Ferraro 2010, p. 1103).

United Nations Sustainable Development Goals & Global Compact

In 2015, the United Nations agreed to the Agenda 2030 for Sustainable Development. As part of the agenda, which is connected to the Paris Agreement of keeping global temperature rise to well below 1.5 degrees Celsius until 2030, 17 Sustainable Development Goals (SDGs) concerning clean energy, responsible consumption, gender equality, labor standards and other issues were adopted. The SDGs have increasingly also been incorporated into the sustainability disclosure of private companies, with more than two thirds of companies included in a KPMG survey including the SDGs in their sustainability reporting framework (KPMG 2020b, p. 44).

Another UN institution related to sustainability reporting is the UN Global Compact. The Global

Compact is a discussion forum launched in 2000 to encourage businesses worldwide to adopt common policies for sustainable and socially responsible behavior (Crowther and Seifi 2018, p. 8). The Global Compact has no regulatory power over firms, but is rather a forum and network facilitating dialogue between companies, governments, labor organizations, NGOs and representatives of civil society regarding environmental and social issues. The compact is based on ten principles, of which three relate to environmental sustainability:

- Businesses should support a precautionary approach to environmental challenges;

- undertake initiatives to promote greater environmental responsibility; and

- encourage the development and diffusion of environmentally friendly technologies. (UN Global Compact 2015, p. 11)

Companies may choose to be part of the Global Compact, but this does not in any way mean that they are legally bound to follow its principles or that their performance is monitored by the Global Compact. The companies are expected to disclose in their annual or sustainability report how they are supporting the goals of the Global Compact, as a way to improve sustainability performance through openness and transparency (UN Global Compact n.d.).

5.1.2 Company presentations

SCA

SCA is a Swedish producer of pulp, paper and wood and the largest private forest owner in Europe (SCA 2020, p. 2). The Östrand pulp mill in northern Sweden has a capacity of 1 million tonnes bleached softwood kraft pulp and chemical thermomechanical pulp per year (SCA 2020, p. 3). Kraft pulping, a process where wood chips are digested in water solution of sodium sulfide and sodium hydroxide at high temperature and pressure to form pulp with high-strength properties, is the most common form of chemical pulping (Cheremisinoff and Rosenfeld 2010, p. 183). The process generally produces large amounts of pollution, but has the environmental benefit of generating its own energy, as combustion of the residual chemicals provides energy for the pulping process (Cheremisinoff and Rosenfeld 2010, pp. 183-184). The company also produces a substantial amount of forest-based bio-energy from wood pellets.

SSAB

SSAB is a Swedish steel manufacturer specializing in high-strength steel. The company has steel production plants in Sweden, Finland and the United States with an annual production capacity of approximately 8,8 million tonnes (SSAB 2020, p. 12). Steel production is a highly energy-intensive industry with large amounts of CO_2 emissions. SSAB was the single largest CO_2 emitter in Sweden in 2019, with 5,5 million tonnes CO_2 released from their sites in Sweden (Lundberg 2020). Globally, the steel industry accounts for 7% of total CO_2 emissions (SSAB 2020, p. 27). In 2016, together with iron ore producer LKAB and energy company Vattenfall, both owned by the Swedish state, SSAB launched a project for the development of fossil-free steel production. The project, named HYBRIT, is planned to bring fossil-free steel to the market by 2026 (SSAB 2020, p. 6).

Boliden

Boliden is a Swedish mining company specialized in the mining of base metals such as copper and zinc, precious metals gold and silver, as well as the production of various by-products such as sulfuric acid (Boliden 2021). The company has operations in the form of mines and smelters in Sweden, Finland, Norway and Ireland. The mining industry is a large emitter of greenhouse gases, accounting for 18% of total emissions in Sweden. Apart from the extraction of raw metals, the company also recycles copper and precious metals from electronics at its smelters (Boliden 2020, p. 29).

Lundin Petroleum

Lundin Petroleum (since 2020 Lundin Energy) is a Nordic oil and gas company with its operations offshore Norway. Lundin Petroleum is part of the Lundin Group, which includes mining and minerals companies, as well as other oil and gas companies and a solar power company (Lundin Group 2021). The company is focused on the upstream of the energy industry, which includes exploration, drilling and production of gas and crude oil, but not its transportation, distribution or refining into petroleum products (Lundin Petroleum 2020, p. 6). The full supply chain of the oil and gas industry generate around 10% of the world's total greenhouse gas emissions, with two thirds of it coming from the upstream process (Gargett, Hall, and Kar 2019).

Trelleborg

Trelleborg is a manufacturer of rubber and plastics, including sealing products, hoses and tires. The

company is split in three business areas that combined have operations in 50 countries across the world (Trelleborg n.d.). Oil is an input material for the production of polymers and 4% of annual global oil and gas consumption goes into the polymers industry (Cormier n.d.). Detailed information on emissions from the polymer industry could not be found.

5.1.3 The communicative situation

The communicative situation in which the sustainability reports are released is an important factor for how the companies construct sustainability. As discussed in the introduction, both investors and society in general are increasingly expecting large companies to operate in an environmentally responsible and sustainable way, in order for them as publicly traded companies to maintain and increase long-term stock value. As shown in the literature review, the genre of sustainability reports as with other forms of accounting is to a large extent about managing expectations among various stakeholders. Naturally, expectations differ between both companies and industries with regards to sustainability, but all are faced with the same communicative problem: to convince their audiences that they are environmentally sustainable actors that add net value to society. Among the studied companies, it is reasonable to expect e.g. Lundin Petroleum, operating in the oil and gas industry, to employ different communicative strategies from SCA, operating in the pulp and paper industry. The former deals in fossil fuels that by all accounts contribute vastly to climate change when used, while the latter's main source of income is generated from trees, a renewable source that absorb CO_2. Yet, the operating emissions from the exploration and extraction of fossil fuels may be significantly lower than from a paper mill. The difficulty of accurately measuring emissions throughout a company's entire value chain and life-cycle of a product makes comparisons between actors complex. A consequence of this is that the communicative situation is more open. Since comparisons are hard to make, environmental sustainability can be constructed in many different ways, depending on the preferences of the companies and their stakeholders. Similarly, what it means to be an environmentally sustainable company is not given, but is up to the company to negotiate through its communication efforts.

5.1.4 Differences between integrated and stand-alone reports

How sustainability is constructed by the companies in their reports is dependent on how they have chosen to structure and publish their reports. Two of the studied companies (Lundin Petroleum and Trelleborg)

have published stand-alone sustainability reports, separate from their annual reports. The three remaining companies have integrated their sustainability reports in their annual reports, with two of them (SSAB and Boliden) dedicating separate sections of the report to sustainability, and the third (SCA) opting for a fully integrated report where sustainability is a theme throughout the entire report.

The integration of the sustainability report in the full annual report can be a way to integrate sustainability work with the core business of an organization (Stubbs and Higgins 2014, p. 1078). Consequently, an integrated report functions as a sign of sustainability work being integrated to all aspects of the companies' activities and that it would not make sense to disclose information about sustainability separately from their financial reports. This is most true for SCA, whose annual report makes references to sustainability so often and consequently that it signifies to the reader a company that is *in the business of sustainability*. In contrast, the stand-alone sustainability report from Lundin Petroleum is structured in a way that clearly distinguishes its sustainability activities and its financial results. A contrasting aspect of integrated reporting is the potential of discourses being mixed and blended with each other, for instance by referring to sustainability not only as an environmental, social or governance issue, but as a question of sustainable revenue or profits (Zappettini and Unerman 2016).

5.2 Signification of environmental sustainability at the level of the text

Alignment with the common discourse

As discussed in the section on the communicative situation, the main communicative challenge for the companies is to motivate how their products and operations are legitimate in a world that increasingly becomes aware of and questions their industries' negative impacts on the environment. Consequently, many of the signs present in the report point towards how the companies see the climate change issue in the same way as the general public does.

> To align with a transition to a low-carbon economy, the steel industry will require a step-change in emissions reductions through alternative steelmaking processes. (SSAB 2020, p. 65)

> Human impact on the climate is resulting in a considerable need to phase out our dependency on fossil fuels. (Boliden 2020, p. 14)

In the quotes above, the companies use language that signifies to the reader that they are on-board with the

collective battle against climate change. These are uncontroversial matter-of-fact statements that signify an alignment with the general perception in society.

Also oil and gas company Lundin Petroleum uses similar language to signify an alignment with the common discourse, with some key differences.

> Lundin Petroleum acknowledges the challenge of reaching an energy balance and seeks to contribute, through its high energy efficiency measures, including its power from shore investment and Decarbonisation Strategy, to the transition to a low carbon society. (Lundin Petroleum 2020, p. 17)

While making similar references to a *low-carbon* society as some of the other companies, Lundin Petroleum uses the phrase *energy balance*, referring to the mix of energy sources that make up the entire energy system. Balance is a word with only positive connotations as it signifies order and harmony, but the company makes no mention of what proportion of total energy consumption should come from fossil fuels. As it operates in the oil and gas sector, it is not able to differentiate itself from the negative connotations associated with fossil fuels, which leads to it barely being mentioned in the report. Lundin Petroleum only mentions fossil fuels once in the sustainability report, describing the world's energy system as still heavily reliant on fossil fuel (Lundin Petroleum 2020, p. 8). The *decarbonisation strategy* that is referred to concerns its "exploration and production related carbon footprint" with the aim of "carbon neutrality by 2030" (Lundin Petroleum 2020, p. 9), but does not concern the environmental impact of fossil fuel throughout the value chain. By using similar language to describe what in practice is a very different approach to reduce its environmental impact from the other studied companies, the sustainability report still creates positive connotations about how Lundin Petroleum sees environmental sustainability.

Another way for the companies to show alignment with the common understanding of climate issues is by committing to the universally adapted UN SDGs. All companies make reference to the SDGs and all except Boliden describe how they live up to each goal that is relevant to their business. The SDGs are an easy way for the companies to show that they care about the common good. Their colorful form (see Figure 5) is universally and instantly recognizable as they are taught in schools and adopted by a multitude of different organizations across the world. This has the effect of the SDGs being almost synonymous with sustainability in today's society, representing a sign that helps the companies construct the concept of environmental sustainability in the reports.
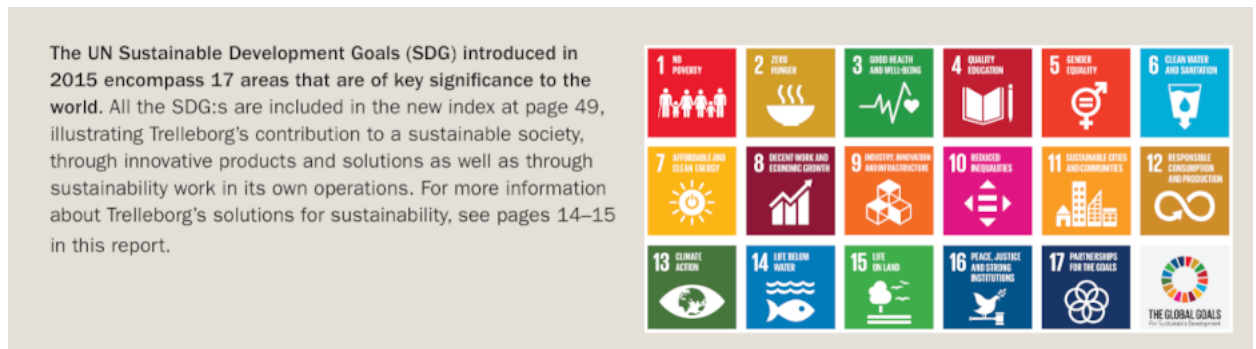
The UN Sustainable Development Goals (SDG) introduced in 2015 encompass 17 areas that are of key significance to the world. All the SDG:s are included in the new index at page 49, illustrating Trelleborg's contribution to a sustainable society, through innovative products and solutions as well as through sustainability work in its own operations. For more information about Trelleborg's solutions for sustainability, see pages 14–15 in this report.

Fig. 5: Trelleborg (2020, p. 51)

Circularity

An often referenced theme in the sustainability reports is the notion of a circular economy, where by-products are re-purposed to eliminate waste and create value, e.g. by being used to generate energy. Symbols of recycling and arrows forming a circle are well-known symbols that are frequently used in the reports. Steel manufacturer SSAB refers to its steel is a "core element in the circular economy" (SSAB 2020, p. 56). The high-strength properties and long life-span of steel makes it a material which can be "endlessly recycled" (SSAB 2020, p. 56). The company uses several different labels to describe its steel,
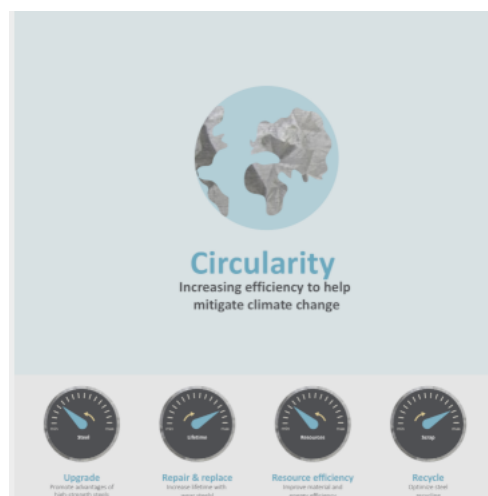

Fig. 6: SSAB (2020, p. 56)

including "GreenCoat", "eco-conscious" and "EcoUpgraded" (SSAB 2020, p. 59) that highlight how its products can contribute to circularity. Also mining company Boliden describes its operations in terms

of circularity and how its part of a cycle with extraction of raw materials, the company's main business, as the first step and later on recycling of metals to extend the life-time (Boliden 2020, p. 9). Both SSAB and Boliden use the connotation of metal as strong and durable to connect it with environmental sustainability.

Polymers manufacturer Trelleborg refers to its circular business approach as "the gradual replacement of input raw materials with recycled materials and of petroleum-based materials with materials from renewable sources" (Trelleborg 2020, p. 13). This shows a different conception of circularity than the companies described above. While the other companies mainly describe their output in terms of circularity, Trelleborg describes its input.

The only of the five studied companies that did not refer to its core business in terms of circularity is Lundin Petroleum. This is most likely due to the incompatibility between fossil fuels and re-use. While the other companies all have the opportunity to use signs that puts at least part of their activities in contrast to fossil fuels and non-renewable resources, that argument is illogical for an oil and gas company. The company does however present an initiative for start-up companies in Arctic Norway "focused on clean energy, circular economy and sustainable use of Arctic resources" (Lundin Petroleum 2020, p. 33).

Fig. 7: SCA (2020, p. 52)

How the concept of circularity is used differently by the companies illustrate how signs can be used in

different ways. The sign made up of the word "circularity" creates connotations of a closed system where resources are recycled, re-purposed and reused with minimal impact on the environment. In the case of SCA (presented in Figure 7), the combination of the description of its circular approach with the image of a box of vegetables, presumably organically grown, signifies to the reader that the company stands not only for profits, but for a sustainable, healthy lifestyle. While this application of circularity is taken the furthest in the SCA report, other companies use it differently. For Boliden and SSAB, who both produce metal products, circularity is about the long life-span of their products that can be endlessly recycled and reused, while Trelleborg describes it in terms of using recycled materials as its production input. For Lundin Petroleum, its core business makes it illogical to talk about a circular approach, which leads to a near complete absence of references to circularity or recycling in how sustainability is constructed in its report.

Sustainability as a business opportunity

Another common type of sign found in the studied reports are the ones that signify sustainability as a business opportunity. The sustainability reports are in general very positive about the value that the transition into more environmental sustainability can bring to the companies. The business opportunities are mostly framed in terms of changing consumer demands, but also as way for the companies to show leadership and innovative power.

> Lundin Petroleum believes our most important contribution to the mitigation of climate change is to produce and deliver the oil that will be needed in the future in the most carbon efficient and responsible manner. (Lundin Petroleum 2020, p. 10)

> We recognise the challenges of climate change combined with the increasing energy needs linked to a growing global population, the international community's commitment to reduce global carbon emissions and the role that forward-thinking companies can play in this. (Lundin Petroleum 2020, p. 16)

> Sustainable consumption requires a transition to renewable and recyclable materials and products. Raw materials from well-managed and growing forests have a crucial role to play in this transition. (SCA 2020, p. 17)

> For society as a whole, many of Trelleborg's solutions help to save energy and reduce emis-

> sions, and play a part in renewable energy supply. With regard to climate issues, Trelleborg therefore has an important role to play in the transition of the global society. (Trelleborg 2020, p. 19)

> In everything we do, we strive to create a stronger, lighter and more sustainable world. Sustainability is a key business driver for both us and our customers. (SSAB 2020, p. 47)

The over-all impression of the sustainability reports is that the companies do not want to signify climate change and other environmental issues in only negative light. It is at least as important to construct environmental sustainability as a business opportunity, with innovation and ability to adapt as key drivers that signify optimism and a positive outlook for the future. The nature of the corporate sustainability report is not just about disclosure of environmental and social impact; it is also a tool for promoting companies as investment opportunities. Hence, environmental sustainability must be constructed also as a business opportunity for the companies.

5.3   Narratives of companies as environmentally sustainable actors

Business in symbiosis with nature

The signs of circularity identified at the level of the text help in constructing narratives of the companies as being in symbiosis with nature. Pulp and paper company SCA describes their production process as an "industrial ecosystem" (SCA 2020, p. 8), where they "borrow biomass from nature's green carbon cycle to make products that replace fossil-based alternatives" (SCA 2020, pp. 10-11). The language is rich with connotations: "ecosystem", "borrow biomass" and "nature's green carbon cycle" all present images of a "green" company in the mind of the reader, itself a sign with further connotations of environmental sustainability and of life. The "fossil-based alternatives" (SCA 2020, p. 11) plastic, fossil fuels, steel and concrete are illustrated in a drab, gray color, signaling non-life, if not death. With language and images, the company inserts itself as an integrated part of nature's carbon cycle, far from images of industrial logging and chemical pulping that make up the company's core business.

The juxtaposition of renewable, life, green and fossil, death, gray make the structural differences as stipulated in Saussure's dyadic model of the sign and Greimas' elementary structure of signification clear, but what makes the language and images a simulacrum of sustainability is how the signs used refer to another symbol, being "green", which itself is a connotation masking itself as a denotation. In an endless
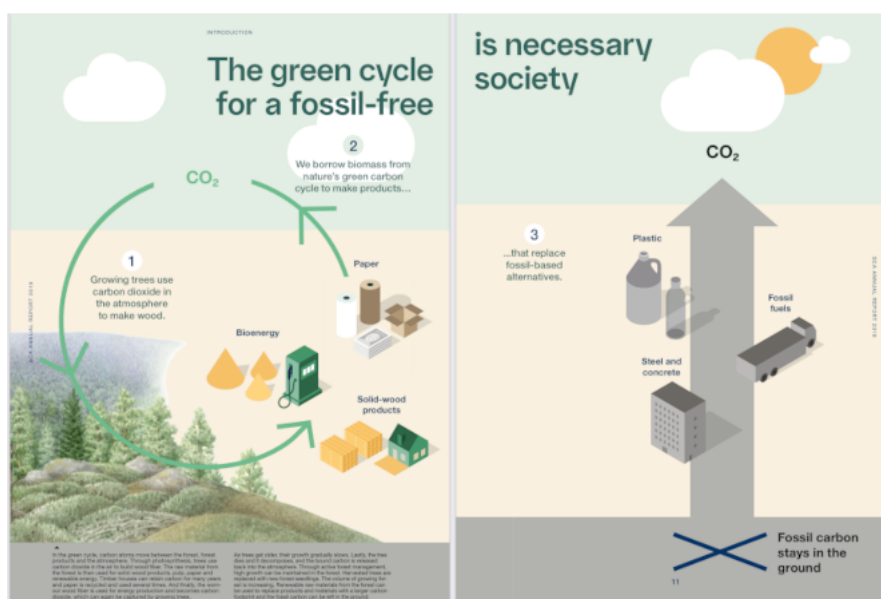
Fig. 8: SCA (2020, pp. 10-11)

process of signification, signs refer back to one another to create a state of simulation that obscures any physical, objective reality without falsifying any facts or pretending. In this state of simulation it is pointless to argue whether the sustainability report is *true* or *false*; the signs - language, images, symbols - creates its own reality where the companies are not just conducting their business and maximize profits while inflicting minimal damage to the natural environment, but who are acting *in symbiosis* with it. Again the report from Lundin Petroleum provides the starkest contrast to the narrative of the SCA report. As an oil and gas company, the narrative of being in symbiosis with nature is too illogical to be made, hence Lundin Petroleum does not use any sign that refers to any ecosystem that they are part of.

Images of company activities in unspoiled nature

Images and particularly photographs are also important signs for the construction of the companies as sustainable actors. Photographs of nature are used in abundance in all reports except Trelleborg, which is almost void of pictures. SCA uses plenty of photographs of majestic forests (e.g. SCA 2020, p. 18) that underline the narrative of a company that is in the business of sustainability, as the environmental benefit of growing trees is continuously mentioned. The other three reports feature several photographs of pristine nature that does not try to conceal the presence of the companies in the unspoiled nature. For instance, Boliden includes a picture of a large excavator working at a dam in a snow-covered landscape

Strategy for sustainable growth

Boliden's strategy prioritizes constant improvements and organic growth above acquisitions. Growth investments are made when stability and efficiency have been achieved in the operation and critical project resources are available. This strategy leads to high value creation and is based on a company culture characterized by great responsibility. Investments are prioritized at the group level with the aim of creating high, long-term value creation within the company.

Fig. 9: Boliden (2020, p. 4)

(Figure 9). The light in the picture is dramatic as the sun is either about to set or has recently risen. The image, which serves as a backdrop to a section of the report headlined "Strategy for sustainable growth", is persuasive of the assumption that mining companies and preserved nature can co-exist, serving the myth of the business being in symbiosis with nature. Lundin Petroleum features several pictures from its oil rigs at sea in the report (e.g. Lundin Petroleum 2020, p. 3, p. 17), where the towering metal constructions stick up from the calm sea against clear blue skies. In the context of the sustainability report, the pictures signal that Lundin Petroleum cares for the preserving of this environment and that they have a natural place there.

Images that show the environmental impact of the companies' activities are much less frequent in the reports, but not totally absent. SCA includes a photograph of one of their pulp mills with rising fume plumes taken from the air, showing its location by the sea and close to a small town (SCA 2020, p. 32). The picture is a backdrop to a section titled "Ramped up to optimal performance" describing the capacity of the company's pulp production. In this context, the image signifies production and growth rather than environmental sustainability. This shows the interdiscursive elements of the corporate sustainability report, especially in its integrated form. The concept of *environmental sustainability* is constructed in conjunction with the concept of *financial profitability* - two different cultures with different significa-

tion processes. In the context of environmental sustainability, the image of fume plumes bring negative connotations and hence they are not presented together with information that relate to sustainability but instead as a sign of the company's profit-generating production, with positive connotations in the context of financial profitability.

Accountability through continuous evaluation

As is common within accounting practices, performances during the fiscal year are measured and presented against targets that were set previously, e.g. five year performance of CO_2 emissions per production unit (CO_2 intensity). Even when targets are not achieved, the efforts of defining targets and continuously measuring performance is a sign that companies are accountable and the disclosure of missed targets signal that they are transparent. Mining company Boliden present some of their environmental performance as in Figure 10. As quantitative disclosure generally is seen as more credible and of higher
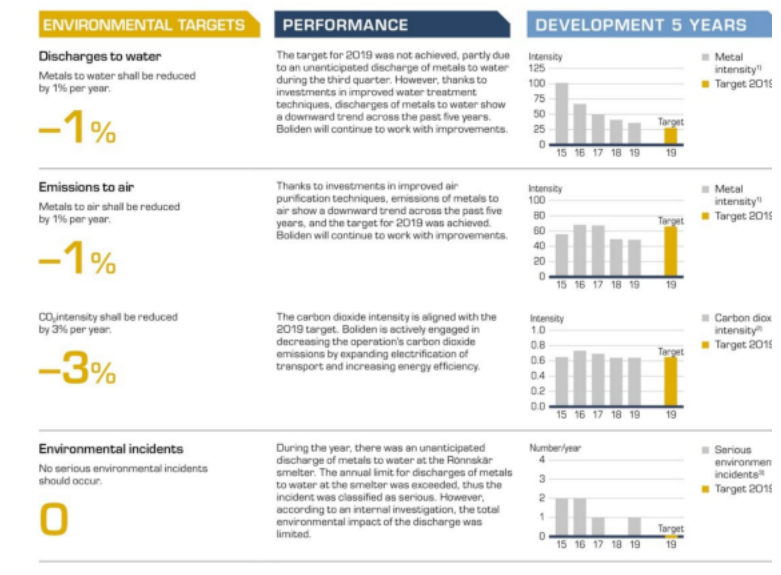

Fig. 10: Boliden (2020, p. 7)

quality (referring back to the literature review, Cho and Patten (2007)), the charts, graphs and printed numbers are powerful signs not just because of the information they transmit but by themselves. Their presence speak to the reader's rationality and claim to present objective truths. As the companies themselves decide what to disclose, however, there is very much behind the charts and numbers that the reader

does not know. Without knowing the full context of the disclosed information, the points of reference to which the signs refer are obfuscated. Their function as signs is merely to represent the connotation of transparency, acting as the "naturalist alibi" that Baudrillard (1988b, p. 87) refers to.

Financial rationality

A third narrative that was identified in the studied sustainability reports was that of the companies as financially rational. As the threat of climate change becomes both more "real" in terms of rising temperatures and sea levels, among other symptoms of climate change mentioned, and more "real" in terms of stakeholders expecting the companies to act in an environmentally sustainable manner, several companies use signs that refer to the importance of environmental sustainability for securing long-term profit.

> Lundin Petroleum is committed to the precautionary principle, and to minimise risks to the natural environment. *To ensure continued success, it must actively manage its environmental impacts.* Measures encompassing research and development, environmental assessments and monitoring, as well as the use of new and improved technologies, help fulfill our commitment. (Lundin Petroleum 2020, p. 14, emphasis added)

> Sustainability is the foundation for everything at SSAB. SSAB wants to offer a safe work environment, adhere to high environmental standards, and to be a responsible partner to all stakeholders. *Engaging with customers in the area of sustainability, and the use of sustainable SSAB steels will enable SSAB to create greater business value.* (SSAB 2020, p. 26, emphasis added)

> Boliden produces metals that make modern society work. The operations are characterized by care for people, the environment, and society. Boliden enjoys a leading position in both sustainable mining and metal production and metals recycling. The combination of extensive experience and the development of best available technology ensures that our mines and smelters are *well-positioned in the face of global competition*. (Boliden 2020, p. 2, emphasis added)

The quotes above are examples of the interdiscursivity of corporate sustainability reports, again showing how signs relating to the two different contexts of environmental sustainability and financial profitability

and rationality coexist in the reports. Importantly, the signs have an effect of mutually reinforcing each other. The view of companies as rational actors that try to maximize its profits is a cornerstone of capitalism and the market economy, deeply engraved in society. When the continuous success of the companies is tied up to them acting in an environmentally sustainable manner, it becomes incomprehensible that they would choose not to and thereby risk their long-term survival. Simultaneously, the environmental benefits of the companies' products - carbon efficient oil and gas, high-strength steel, responsibly mined metals, etc. - makes it a logical argument to see the continued success of the companies as something that is positive in the context of environmental sustainability. In this way, the two narratives of rationality and sustainability that coexist in the sustainability report are self-referential. What happens outside the report - in the physical world - is irrelevant.

5.4 Intertextual and text-external references to environmental sustainability

Intertextual relationships with previous sustainability reports

As previously mentioned the reports are filled with charts and graphs showing the continuous development of a certain aspect of environmental sustainability over several years. Implicitly these charts and graphs refer to the sustainability reports that were published in preceding years, showing the reader that the companies are performing better now than they were before, and consequently that things are likely to continue to improve. Previous sustainability reports thereby become the points of reference against which the current results are measured. As the charts and graphs are arbitrary themselves, this becomes an endless cycle of signification that only refers back to the previous arbitrary reference point, creating a simulacrum that cannot be considered true or false.

External awards and ratings

Several of the studied companies make references to being recognized by external parties for their achievements within the field of environmental sustainability. The awards are to a large extent related to the companies' previous sustainability reports and other communication efforts that highlight its environmental performance.

Trelleborg came third in the Durable consumer goods category in the new Swedish sustain-

ability ranking Hållbara Bolag 2019, arranged by the business daily *Dagens Industri and the*

Aktuell Hållbarhet magazine. Trelleborg was also third in this category in 2018. (Trelleborg

2020, p. 18, emphasis in original)

Hållbara Bolag (Sustainable Companies) is a ranking of Swedish public companies that base its results

on a survey together with an analysis of sustainability reports and company websites. The analysis is in

turn based largely on the quantity of disclosed information and on the incorporation of the UN Sustain-

able Development Goals into the business model that is communicated through the sustainability reports

and websites (Boman 2019). In other words, signs from the sustainability report generate an award from

a third-party, which then is incorporated in the future sustainability report, signifying Trelleborg's com-

petitiveness among other companies in the same category when it comes to its environmental work. The

sign that is presented has no origin outside of the context of the sustainability report; it is its own pure

simulacrum.

   Lundin Petroleum is another company that use ratings from external parties in their sustainability

report.

We are pleased that the Company is ranked in the top quartile among the main rating agen-

cies. We are also proud to have received the Nasdaq ESG Transparency Badge for our en-

gagement in market transparency and raising environmental standards. (Lundin Petroleum

2020, p. 31)

Fig. 11: Lundin Petroleum (2020, p. 31)

All listed ratings as disclosed by Lundin Petroleum in Figure 11 are ratings from third-party investment analytics firms. As such, the ratings are based on the quality of the company's disclosure, rather than on their actual environmental impact, which would not be assessed by the investment community. The presence of the ratings in the sustainability report and the company's description of being "ranked in the top quartile" again create the image in the mind of the reader that the company performs admirably when it comes to sustainability. But as the ratings origin in the investment community, the signs' points of reference are arbitrary, located inside the financial sphere and disconnected from the physical reality where emissions from oil and gas have an actual impact on the climate.

6 Discussion

Semiotic analysis is about finding underlying myths that, while not outspoken, are present in the communication regarding a certain phenomenon and form a sort of grammar that becomes embedded in a culture. What I have attempted to find out with this thesis is what myths are present in the construction of corporate environmental sustainability and how it affects the communication companies send out to stakeholders with their sustainability reports. The semiotic analysis has shown that there are elements in the sustainability that seem to be without origin in the physical reality. At the level of the text, the companies construct environmental sustainability in an optimistic manner. While making clear that they have understood the graveness of the situation, by aligning with the common discourse around environmental sustainability in society, they stress how sustainability is about circular systems where their products play a natural part due to their unique features and qualities and present it as a business opportunity that can benefit not only the companies' financial stakeholders, but society in general. For the company in the oil and gas industry that is not able to differentiate itself from the negative connotations associated with fossil fuels, the argument of circularity is illogical and therefore largely absent. This is to me an indication that there in fact are limits as to what can be considered to be hyperreal in the sustainability reports.

At the narrative level, the signs at the level of the text are turned into myths. In the case of pulp and paper company SCA, the circularity argument present at the level of the text is turned into a myth of how the company is in symbiosis with nature and part of an ecosystem. At this point the consequences of the self-referential sign system become clear, as the narratives of the companies as being both environmentally sustainable and financially rational are mutually reinforcing each other. While I did not attempt the same large-scale empirical analysis as Boiral (2013), instead focusing more closely on the communicative and semiotic aspects of corporate sustainability, some of the findings are similar to the previously mentioned study's, namely the absence of images that realistically depict the environmental impact of the companies' activities as well as the emphasis on positive achievements such as external ratings and awards.

An important caveat, which I hope has been clear throughout the thesis, is that the analysis does not in any way show that the companies do not take the threat of climate change seriously, or that they consciously conceal the truth about the environmental impact of their activities, as this cannot be judged based on the empirical material used for the study. What the semiotic analysis has shown is that the

sustainability reports contain signs that refer to other signs that do not originate in a physical reality, but only in the context of corporate sustainability, which itself is an arbitrarily created concept that arguably contains more parameters than actual environmental impacts. The consequence of this self-referentiality is that it is impossible to consider the sustainability reports as transparent accounts that reflect what actually occurs in the world. While they contain elements of what is real, they also contain elements of hyperreality; simulacra where the concept of sustainability loses its connection to reality.

This does not completely disregard the neo-institutionalist stipulations of sustainability reporting as a way to increase transparency and accountability among public companies. The concept of materiality can be viewed as a defense mechanism against the dispersion of signs that are disconnected from reality, as it forces the companies to analyze what *really* matters and disclose that information to the public. But what post-structuralism and semiotics can remind us of is that when a concept such as materiality is incorporated into a sustainability report, it brings with it a sheen of objective truth that depoliticizes it and turns it into a naturalist alibi that in turn can be used to legitimate other aspects of the report. These self-referential - or circular, for that matter - processes of signification is what this thesis has attempted to show.

7   Conclusions

The aim of the thesis was to find out how companies in the Swedish heavy industry sector use communication in their annual sustainability reports to construct their environmental sustainability work. The main research question was:

RQ.   How are signs used by the five studied companies in the Swedish heavy industry sector to construct environmental sustainability through their annual sustainability reports?

The analysis applied a semiotic and post-structuralist perspective on the studied documents, and was guided by three additional research questions. The findings relating to each question are summarized below, before the results of the study are discussed in relation to the main research question.

RQa.   What signs in the reports are important for the construction of environmental sustainability?

The most important signs that the companies used to construct the concept of environmental sustainability were found to be those that related to an alignment with the common discourse, descriptions of circularity and recycling, and the positive outlooks regarding how sustainability can be turned into a business opportunity. While four of the companies used similar signs in their constructions of environmental sustainability, Lundin Petroleum stood out as the exception due to the incompatibility between the circularity argument and the oil and gas industry.

RQb.   How do the companies construct themselves as environmentally sustainable actors?

The semiotic analysis found that the pulp and paper company SCA constructs a narrative of itself as being in symbiosis with nature, heavily emphasizing descriptions in the context of environmental sustainability of its forestry operations over the more emission-generating pulp and paper production. Further, the analysis found that the companies use images of unspoiled nature to construct themselves as environmentally sustainable, with the exception of Trelleborg which featured a much smaller quantity of images in its report. The analysis also showed how the companies use charts and graphs to signify transparency and accountability and how the parallel narratives of the companies as financially rational and environmentally sustainable work as mutually reinforcing signification processes, indicating an interdiscursive appropriation of semiotic resources to strengthen each narrative. I argue that the coupling of the two narratives that both are semiotically constructed in the sustainability report results in a disconnect from reality,

RQc.   How do the sustainability reports relate to other texts and social constructions of environ-

mental sustainability?

The analysis found that the companies to a large extent make references to previous sustainability re-
ports to emphasize positive development, which I argue is an example of self-referentiality due to the
intertextual relationship between the signs. Further, as a way to signify its performance with regards to
sustainability, two of the companies (Trelleborg and Lundin Petroleum) used external awards and ratings
that I argue largely are dependent on previous sustainability reports, thereby constituting a self-referential
relationship that is disconnected from reality.

Together, the findings at the three analytical levels show that the studied companies' constructions of
environmentally sustainability to a large degree is characterized by self-referential, intertextual and in-
terdiscursive relations between the signs in the sustainability reports. The analysis also showed how the
sustainability reports contain elements of hyperreality (Baudrillard 1994) in how signs present in the sus-
tainability reports only refer to other signs in the same context, creating a mutually reinforcing process
of signification that has lost its connection to reality.

7.1   Implications, limitations and suggestions for further research

While the results of the study should not be interpreted as conclusive evidence , I strongly believe that the
findings implicate that an increased attention to how language and other signs are used to construct envi-
ronmental sustainability is justified. As described in the beginning of this thesis, corporate sustainability
is an increasingly important factor for investment decisions, affecting the flows of huge sums of money
worldwide, and is yet so difficult to make sense of with the traditional financial and accounting metrics.
This makes the communicative aspects of it the more important, and as I hope to have shown with my
thesis, semiotics might be an effective method for researchers in the field of strategic communication to
approach the subject.

The current study was conducted as a multiple-case study with five companies representing environ-
mentally sensitive industries in the Swedish heavy industry sector as its sample. Given the purpose of
the thesis, the case selection was justified, but it presented methodological difficulties. On the one hand,
the inclusion of five different companies hindered an even closer examination of the texts, as this would

have been incomprehensible given the scope of the study. On the other hand, the sample was not large enough for drawing any general conclusions from the results. Similarly, the inclusion of both integrated and stand-alone sustainability reports in the case selection distracted from the semiotic analysis, and was not beneficial for the purpose of the study. Hence, either a more focused approach concerned with only one text or an extended sample where the semiotic analysis is supported by some quantitative elements might prove a fruitful avenue for future research. Another possibility that would tell us more about the intertextuality of sustainability reports could be a so-called longitudinal study, where the reports of a single company from multiple years are analyzed.

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