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Economic Research-Ekonomska Istraživanja

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/rero20

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**To cite this article:** José-Santiago Fernández-Vázquez (2020): Analysing the environmental websites of the world's greatest polluters: a multimodal ecolinguistic approach, Economic Research-Ekonomska Istraživanja, DOI: 10.1080/1331677X.2020.1836993

**To link to this article:** https://doi.org/10.1080/1331677X.2020.1836993



Published online: 10 Nov 2020.

ECONOMIC RESEARCH-EKONOMSKA ISTRAŽIVANJA
https://doi.org/10.1080/1331677X.2020.1836993

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# Analysing the environmental websites of the world's greatest polluters: a multimodal ecolinguistic approach

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**ABSTRACT**

This paper develops a visual analysis of the environmental webpages of 20 global companies, considered to be the world's greatest polluters in terms of their carbon emissions into the atmosphere. Our aim is to determine how these companies build a public reputation as environmentally concerned agents in relation to climate change. The analysis is based on the theoretical and methodological propositions put forward by Critical Discourse Analysis, ecolinguistics and multimodal analysis. More specifically, we take into account Kress and van Leeuwen's grammar of visual design, which enables us to describe and classify the images on webpages and to determine how these images are used to enforce certain narratives and ideologies. The paper also develops a comparative study of promotional strategies and the level of development and communicative efficiency of the sustainability webpages of Western and non-Western companies, on the one hand, and of global companies and environmental NGOs on the other.

**ARTICLE HISTORY**
Received 25 June 2020
Accepted 11 October 2020

**KEYWORDS**
Climate change; corporate discourse; promotional discourse; multimodal analysis; critical discourse analysis; ecolinguistics

**JEL CLASSIFICATIONS**
L20; L31; L33

## 1. Introduction

Over the last three decades, public opinion has become increasingly concerned with the preservation of the environment and the need to fight against climate change. A global study carried out by Ipsos in 28 countries between February and March 2019 found that climate change is the most important environmental issue for more than one-third (37%) of citizens around the world (Ipsos, 2019). As might be expected, corporate reputation is affected by this public concern. The 2019 UK Authenticity Gap Report found that two-thirds of consumers want companies to make a greater contribution to the welfare of society, with 53% mentioning climate change as one of the main issues that companies should address (FleishmanHillard, 2019). In fact, more than half of those who were surveyed declared that their attitude towards a brand as consumers was influenced more by the information that they received on

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how the management behaved, and on how the company engaged with social issues, than by the products and services themselves. These conclusions suggest that it is vital for companies to build a public discourse on citizens' social concerns, including environmental matters, if they want to preserve their reputational value as an essential part of the brand assets. On the other hand, we should not forget that large corporations are frequently considered to be the 'real culprits' of the environmental crisis (Byskov, 2019; Kvaric, 2019). This makes it even more necessary for them to build a persuasive and well-articulated corporate social responsibility (CSR) discourse on climate change and the environment, which can be disseminated to all customers and stakeholders. The creation of sustainability webpages is one of the most readily available means for this public relations purpose, as they constitute cost-effective systems to reach large audiences. Other instruments, such as corporate reports, may also be used for public relations, but they tend to focus on more specialised audiences.

This paper develops a visual analysis of the environmental webpages of 20 global companies, considered to be the world's greatest polluters in terms of their carbon emissions into the atmosphere, according to the research published by the Climate Accountability Institute in the US (2019). Our aim is to examine how these companies deal with climate change issues on their webpages, in order to disassociate themselves from their image as environmentally harmful businesses. More specifically, we intend to establish what types of visual narratives are used to convince stakeholders about the companies' engagement with environmentally responsible policies and how these corporate narratives differ from other social accounts. In essence, we try to answer the following research questions:

- What degree of attention do these global companies pay to the discussion of climate change on their webpages?
- Can we find any differences in the level of development and communicative efficiency of sustainability webpages from Western companies and from those companies whose major basis of operation lies outside the West?
- What visual attributes are used on these corporate websites to communicate the company's stance? How do the images selected contribute to reinforce underlying discourses and narratives on climate change?
- How do the visual narratives created by the biggest polluters differ from the visual narratives endorsed by non-profit organisations? What are the practical implications of these differences for global companies?

Before we address these questions, however, we should clarify how we understand the notions of 'discourse' and 'narrative', as these concepts can be interpreted in different ways. Basically, in this study we consider discourses according to an ecolinguistic framework, as 'standardized ways [in which] particular groups in society use language, images and other forms of representation' (Stibbe, 2015, p. 22). The construction of a corporate discourse represents an attempt to communicate a certain ideological position (taken as a specific worldview) and to create a structured system of relationships both within and outside the domain of the company (Jaworska, 2020). As part of corporate environmental discourses, climate change narratives are

to be understood, following Fløttum (2010), as 'verbal constructions or stories that present climate change as a certain type of problem, with implicit or explicit suggestions for action' and 'with a more or less clear evaluation component' (pp. 13–14). In corporate contexts, the creation of specific climate change narratives works to legitimise the actions undertaken by the corporation in relation to social welfare and to bid a positive appraisal of the company's identity (Fernández-Vázquez & Sancho-Rodríguez, 2020a).

The relevance of webpages for corporate communication, and more specifically for CSR discourses, has been mentioned in several academic studies (see, for example, Atli et al., 2018; Hetze & Winistörfer, 2016; Tenca, 2018). Websites are visual cultural expressions. Therefore, special attention should be given to those images that appear on the webpage and to the way in which these visual resources are used to communicate. The present study seeks to examine how global companies disseminate their views on the environment by using certain types of images, which promote specific discourses. The investigation is based on the analytical tools proposed by Kress and van Leeuwen (1996), who offer a systematic and comprehensive framework to determine how images communicate meaning. Our study examines all the images used on the webpages of the 20 greatest polluters and contrasts them to the visual discourse reproduced on NGO environmental websites. We think that this contrast may be useful for two reasons: first, the comparison between these two types of visual narratives reveals ideological and conceptual differences in the description of the environment and the relationship between humans and the natural world. This helps us to identify the attitude that the greatest polluters take towards environmental matters. At the same time, the discursive and communication strategies used by NGOs can be useful for those companies that want to improve their environmental communications and reach the general public more effectively.

The remainder of this paper is structured as follows. First, a brief review of the literature on climate change and environmental CSR communications is presented (section 2). Section 3 describes the theoretical framework, based on discourse analysis, ecolinguistics and multimodal discourse analysis, a branch of communication studies which extends the methodological proceedings of linguistics to other semiotic modes, such as images (Jewitt, 2014, 2016; Kress & van Leeuwen, 1996; O'Halloran, 2011). Section 4 explains the methodology that has been used, based on the classification of all the images found on the corporate webpages. Then, research findings are discussed (section 5), before the paper concludes with the academic and practical implications of the investigation and possible lines for future research (Section 6).

## 2. Literature review

Previous scholarship has acknowledged the importance of corporate discourses on climate change as part of the attempt to orientate the stakeholders' perception of a brand (Calabrese et al., 2019; Solomon et al., 2011). To have positive effects on stakeholders, however, climate change disclosing should be planned carefully according to the company's public relations strategy, for example by releasing this information gradually through the media (Lee et al., 2015) and by taking into account possible

differences in how different stakeholders will receive environmental information (Radhouane et al., 2018). A number of factors have been found to influence a company's readiness to be publicly engaged with climate change. Among them, size (Córdova et al., 2018; Eleftheriadis & Anagnostopoulou, 2015; Nartey, 2018; Sánchez-Infante Hernández et al., 2020), internal organisation systems (Córdova et al., 2018; Nartey, 2018; Rankin et al., 2011), international presence (Halkos & Skouloudis, 2016), the sector in which the companies operate (Weder et al., 2019), and external pressure (Haque & Islam, 2015; Littlewood et al., 2018), including media exposure (Wang et al., 2013) and extraordinary natural disasters (Pollach, 2018). Research also suggests that those companies and countries which implement environmental issues in their everyday practices, through patents or industrial and economic activity, tend to be more successful in terms of competitive advantages, economic growth and innovation (Ferreira et al., 2020; Mohammadi et al., 2018; Singh et al., 2019; Skare & Golja, 2012).

Several researchers have focused on how corporations use communication policies as 'greenwashing'. While the meaning of the term is disputed, greenwashing is generally understood as false advertising or partial disclosure of environmental data (Gatti et al., 2019). One of the most frequently quoted definitions states that greenwashing is 'the practice of promoting environmentally friendly programs to deflect attention from an organization's environmentally unfriendly or less savoury activities' (Marquis & Toffel, 2011, 9. 19). Greenwashing refers to information policies and it should be distinguished from the environmental performance achieved by a corporation. Investigations show that 'hard greenwashing' (developing environmental communications without implementing real CSR policies) may actually be detrimental to the reputation of a firm (Bazilier & Vauday, 2013). In this paper, we consider greenwashing strategies in relation to discursive formation, i.e. we do not evaluate the environmental practices that companies implement, or the degree of falsehood of the environmental information that they disclose. Rather, we draw on the philosophy of ecolinguistics and multimodal studies to reveal how companies use website images to promote certain assumptions and narratives on technology, consumerism and business activity which prevent or moderate ecological activism. Thus, as this investigation shows, the visual narratives reproduced on the environmental webpages of the greatest polluters induce social conformity in relation to environmental damage, downplay the urgency of the fight against climate change and suggest that actions to avoid ecological destruction should be subordinated to industrial and economic development.

Some scholars have discussed the role that environmental CSR reporting plays on corporate websites, as we do in this study. Morhardt (2010), for example, carries out a comprehensive study of all Fortune 500 and Fortune 1000 companies in 25 industrial sectors and ranks them in terms of reporting quality according to the Pacific Sustainability Index. Jayanti (2018) analyses the webpages of the 100 most sustainable global companies to conclude that although there is significant variation in sustainability topics, environmental concerns are firmly anchored to corporate communications, with most companies dealing with topics associated with climate change, such as energy consumption (68%) or transport (88%). Weder et al. (2019), for their part,

analyse the energy sector, where, as expected, most companies dedicate considerable communication efforts to CSR reporting. These previous investigations focus on the criteria that influence CSR reporting or, alternatively, on the major topics and types of actions that companies include on their websites. Our paper contributes to the scientific literature in a different way. Its purpose is to disclose the visual narratives on climate change which 'the biggest polluters' circulate among the general public and to compare them with the narratives created by non-profit organisations. We innovate, therefore, by adopting a multimodal approach, which deals with ecological visual discourse, an area which is under-researched. Gong, for example, recently referred to the need to undertake more 'multimodal ecological discourse analyses' (2019, p. 50). We also innovate by adopting a comparative method which contrasts visual narrative patterns in business and NGO contexts. Generally, the relationship between NGOs and corporations in terms of sustainability practices has been studied as an example of partnership (Bitzer & Glasbergen, 2015; Idemudia, 2017; Moosmayer et al., 2019; Shumate et al., 2018) or social proximity (Joensuu et al., 2015). However, with some exceptions (Ferguson et al., 2016; Fernández-Vázquez & Sancho-Rodríguez, 2020a), scholars have not yet compared the use of communication strategies in corporate and NGO websites. As we have said, we believe that this comparison can be useful to identify examples of good practice in NGO environmental communications that can be transferred to the corporate world.

To identify the visual narrative patterns used on corporate websites, we should consider rhetorical strategies and the types of discourses that have been found to be prominent in environmental CSR reports.[1] Often, references to profit and financial return occupy a central position in corporate discussions on climate change (Ferguson et al., 2016; Laine, 2010). This suggests that companies are more interested in preserving their business and reputation (by pretending to be environmentally concerned agents) than in undertaking real efforts to face the climate crisis. The prevalence of certain rhetorical strategies in corporate discourses on climate change seems to confirm this hypothesis of 'greenwashing'. Tregidga et al. (2013), for example, show how corporate communications on sustainability resort to the metaphor of a journey without destination, which at first sight suggests a commitment for change (the journey), but actually reinforces 'the business as usual', thus deflecting 'attention away from the destination, that is, sustainability' (Tregidga et al., 2013, p. 121). Interestingly, Ihlen and Roper (2014) perceive an evolution in sustainability corporate discourses, which have started to discard the 'journey' metaphor, implying that companies have already arrived to the desired destination of being 'sustainable', which allows them to 'balance' their business with environmental care. Lischinsky (2015) explores the use of the natural environment as a stakeholder in CSR reporting and concludes that the environment is represented as an entity without agency, unlike other stakeholders, in an effort, once again, to obscure company responsibilities. Wright and Nyberg (2017), for their part, argue that corporations use framing (orienting the debate on an issue in a certain way), localising (making the conceptual frames relevant for local contexts) and normalising (realigning practices and activities with dominant organisational discourses) to prevent climate change concerns from altering 'business as usual'. Similarly, Ferns et al. (2019) and Jaworska (2018)

conclude that companies resort to myth-making, hedging and distancing strategies to 'simulate' commitment to climate change, while refusing to adopt specific solutions to solve the problem. Nik Ahmad and Hossain (2019) also find that recent efforts on the part of Malaysian companies to include allusions to climate change in their CSR reports are mostly rhetorical exercises and do not correspond to a real concern.

Regarding discourse typology, Nik Ahmad and Hossain (2015) follow Itanen (2011) to identify three kinds of CSR discourses in relation to climate change: business discourses, related to financial issues and strategic management; caring discourses, i.e., statements suggesting that the company is concerned with social problems; and sharing discourses, showing the company's efforts to establish alliances with other social agents. Shrivastava and Guimarães-Costa (2017) also perceive the tendency of corporations to include cooperation with other social agents as part of their corporate discourse in an attempt to gain legitimacy. In addition, their investigation shows a development in the corporate discourse on sustainability, which used to be based on 'eco-efficiency' and has now evolved to more blended or 'hybridised' forms, as firms try to make their interests converge with those of other social stakeholders. For example, O'Connor and Gronewold (2013) examine the sustainability reports of the main global oil companies and point out that these corporations combine institutional and competitive advantage language in their discourses. Dahl and Fløttum (2019), for their part, focus on energy companies, where they also find a variety of discourses, with different emphasis on the topics of risk, responsibility and opportunity.

In a more critical vein, Ferguson et al. (2016) showed that corporate website communication tends to use vague claims, visual and linguistic contents in comparison with NGO website messages, which are more factual and verifiable. Gong (2019) finds that environmental corporate reports frequently contain 'destructive' discourses, which limit some actions that are beneficial to the environment but which could damage the economic benefits of the company. Fernández-Vázquez and Sancho-Rodríguez (2020a), for their part, show how Spanish Ibex 35 corporations build climate change discourses which emphasise passivity on the part of the addressee and which reinforce technocentric attitudes, as a way to prevent drastic actions against climate change. Our investigation draws on this last study from the methodological point of view, but it expands the scope to a larger international context by focusing on companies which are based in different countries and which have a global influence in terms of economic activity.

## 3. Theoretical background

### *3.1. Multimodal analysis*

Contemporary linguistics and social theory consider discourse as a social construction (Fairclough, 1989). In the 1980s, a group of scholars developed a branch of linguistics which they called Critical Discourse Analysis (CDA) to determine how language contributes to uphold and challenge dominant ideologies. CDA concentrates on linguistic elements with the intention of disclosing 'their generally hidden determinants in the system of social relationships, as well as hidden effects they may have upon that

system' (Fairclough, 1989, p. 5). To reveal these 'hidden effects', CDA focuses the lens on the linguistic choices that appear in a text and discusses how these choices, be they lexical, grammatical or structural, contribute to the persuasive effect that the author intends to achieve. More recently, researchers have pushed the limits of CDA beyond the linguistic sign. As a development of CDA, Multimodal Analysis argues that, in order to understand the meaning of an act of communication, we should look at different semiotic modes, including visual resources.

Working within a multimodal perspective, Kress and van Leeuwen (1996) claim that the conception and presentation of images (the visual choices that we make) influence the way in which we perceive reality. To study how visual structures affect our perceptions, Kress and van Leeuwen put forward a theory of visual grammar, a multimodal approach to communication which distinguishes three types of meaning: representational, interactional and compositional. Representational meaning covers narrative representations and conceptual representations. In narrative representations the elements reproduced in the image (which Kress and van Leeuwen call 'participants') show some sort of interaction. They are '*doing* something to or for each other' (1996, p. 56). They are connected by some sort of transactional relation or 'vector'. By contrast, in conceptual representations the participants are static. They are presented 'in terms of their generalized and more or less stable timeless essence' (1996, p. 56). Interactive meaning, for its part, accounts for the contact between the producer and the viewer of the image. It can be explained by three dimensions: gaze, size and perspective. In terms of gaze, we should distinguish between those images which appeal to the viewer, for example by looking directly at the recipient of the image, and those in which the participant being represented is not interacting with the viewer (absence of gaze). In the first case, we speak of a 'demand' (by interacting with the viewer the participant symbolically demands something for the recipient). Conversely, when there is no interaction with the viewer, we speak of an 'offer' (the participant is an object for contemplation). Compositional meaning attends to the way in which the participants are arranged according to certain patterns in order to form a meaningful whole. This implies looking at information value (the placement of elements), salience (elements in the foreground are given more importance) and framing (imaginary lines which connect the elements in the composition). The following table summarises some of the major functions of Kress and van Leeuwen's grammar of visual design.

### 3.2. Ecolinguistics

Ecolinguistics is a branch of CDA that links the study of discourse with ecology. Ecolinguistics generally uses the same tools as CDA, but it understands ideology and power relations as notions that cover both human and non-human subjects (Dash, 2019). The words used to describe animals or plants, for example, may contribute to present them as instrumental entities, according to an anthropocentric philosophy, or may endow these non-human beings with agency, as autonomous subjects. A crucial area of research for ecolinguistics is how language contributes to create specific stories or narratives: what Stibbe calls 'the stories-we-live-by' (2015, p. 6). These are

cognitive structures which influence the way in which we perceive the relationship between humans and nature, economic growth and technological progress, and which, consequently, determine how we will act towards the ecosphere. In their ecolinguistic study of UK national newspaper editorials, for example, Norton and Hulme (2019) identify several narratives that are relevant for the analysis of climate change corporate discourse, among them: the 'smart growth reformer story', which defends that capitalism and market solutions can stop climate change from becoming a catastrophe; the 'ecomodernist' story, which suggests that technological innovations can mitigate climate change; and the 'ecoactivist story', which contends that humans are reaching the limit of natural resources and destroying the natural world upon which they depend. Ecocriticism claims that the hegemonic narratives to which we are exposed appear between the lines of a text (Stibbe, 2015). They are not necessarily self-evident. These narratives can be identified, however, by analysing the language used in a certain discourse. The ecolinguistic framework can also be extended to other semiotic codes, following the path of multimodal analysis. Thus, in this investigation we apply the ecolinguistic method to the study of website images in order to identify the underlying narratives (or stories) that environmental corporate discourses promote.

## 4. Material and methods

### *4.1. Data collection*

This study was conducted in two phases: data collection and visual analysis. In the first stage (data collection), Google Chrome was used to track down the corporate websites of the world's 20 greatest polluters, according to the research published by the Climate Accountability Institute in the US (2019). These global companies are Saudi Aramco, Chevron, Gazprom, ExxonMobil, National Iranian Oil Company, BP, Royal Dutch Shell, Coal India, Pemex, Petróleos de Venezuela (PDSA), PetroChina, Peabody Energy, ConocoPhillips, Abu Dhabi National Oil Company, Kuwait Petroleum Corporation, Iraq National Oil Company, Total SA, Sonatrach, BHP Billiton and Petrobas. The researchers browsed through the webpages to locate the information that they contained on climate change. This information was downloaded. Data were collected in January, 2020. When a company had several websites, only the main corporate global site in English was taken into account. All website images were analysed. We discarded only those images that showed charts, diagrams or abstract realities of some sort, as they have an 'objective' nature which makes them unsuitable for analysis according to visual grammar (Kress & van Leeuwen, 1996). 130 images were identified on the company websites.

Since one of our aims was to compare corporate discourses on climate change with the discourses enacted by other social actors, we followed the same procedure for the websites of 12 global non-profit organisations (NGOs) which take the protection of the environment as one of their main objectives. These NGOs were selected on the basis of a sample compiled by the University of California Berkeley Library, excluding those organisations which do not have a specific section on their websites to discuss the effects of climate change (https://guides.lib.berkeley.edu/NGOs). The

**Table 1.** Kress and van Leeuwen's grammar of visual design: major dimensions (1996).

| MEANING/FUNCTION | DIMENSION/TECHNIQUE | | |
|---|---|---|---|
| Representational | Narrative representation | | Conceptual representation |
| Interactional | Gaze (demand/ offer) | Size (Intimate/social/ impersonal) | |
| Compositional | Information value, salience and framing | | |

Source: Authors' own creation.

NGOs selected were Greenpeace, Earth Island Institute, Earth Justice, Environmental Defense Fund, Fauna and Flora International, Nature Friends International, Global Footprint Network, International Union for Conservation of Nature, Nature Conservancy, National Resources Defense Council, World Agroforestry Center and World Wildlife Fund (WWF). The websites on climate change from these NGOs contained 311 images to be classified. Again, all images were analysed according to the theories of visual grammar.

### 4.2. Data analysis

After collecting the data that we needed for our research, we tried to determine the importance that the world's greatest polluters give to climate change in their corporate discourses, as manifested through their public webpages. To do so, we distinguished three levels of involvement. Those webpages which contained no specific reference to climate change, or which at best reproduced a formal report that had to be downloaded by the Internet user, were considered to be at the first level. In this sense, we understood that formal and legal reports, deprived of additional explanations, are not appropriate tools to address non-specialised audiences. The second level of involvement corresponds to those companies which make reference to climate change within a general section on environmental sustainability, designed so that it can be understood by a general audience. Those webpages which contain a specific section for climate change were considered to be at the third level.

All pictures were analysed according to the parameters established by visual grammar (see Table 1). As the first step of the investigation, we identified the participants in each picture, which enabled us to determine the main topic being represented. Following the methodology laid out by Fernández-Vázquez and Sancho-Rodríguez (2020a), we distinguished three main topics, with mixed combinations: nature, technology and people. When nature appeared as a participant, we tried to determine if there were negative connotations which could be inferred from the visual representation, as is the case with some of the extreme consequences produced by climate change (drought, floods, pollution, etc.). The representational and interactional functions were also analysed. Thus, we established if there was any kind of interaction among the participants (narrative representation) or if they were static (conceptual representation), and if there was an appeal to the viewer (demand). An intercoder reliability test was performed by an independent observer (a colleague who had not participated in the research) on a 10% sample (13 pictures for the global companies and 32 pictures for NGOs). Cohen's Kappa measures were calculated for each variable. There was substantial agreement concerning topic (kappa = 0.950), the representational function (kappa = 0.932) and the interactional function (kappa = 0.920).

**Table 2.** Relevance given to climate change issues in the world's greatest polluters' websites.

| Name of company | Country | Relevance given to climate change issues |
|---|---|---|
| Abu Dhabi National Oil Company | Abu Dhabi | 2 |
| Sonatrach | Algeria | 1 (Website is only in French) |
| BHP Billiton | Australia | 3 |
| Petrobas | Brazil | 3 |
| PetroChina | China | 2 |
| Total SA | France | 3 |
| Coal India | India | 1 |
| National Iranian Oil Company | Iran | 1 |
| Iraq National Oil Company | Iraq | 1 (No website) |
| Kuwait Petroleum Corporation | Kuwait | 1 |
| Pemex | Mexico | 1 |
| Royal Dutch Shell | Netherlands | 3 |
| Gazprom | Russia | 2 |
| Saudi Aramco | Saudi Arabia | 3 |
| BP | United Kingdom | 3 |
| Chevron | USA | 3 |
| ExxonMobil | USA | 3 |
| PeaBody Energy | USA | 3 |
| ConocoPhillips | USA | 3 |
| Petróleos de Venezuela (PDVSA) | Venezuela | 1 |

1 = no major reference to climate change; 2 = discussions on climate change within a more general section on sustainability; 3 = website contains a specific section on climate change.
Source: Authors' own creation.

As expected, given its more subjective nature, connotations created the greatest disagreement, but divergences were still very limited (kappa = 0.896).

## 5. Results and discussion

The analysis of the references to climate change on the websites from the world's greatest polluters showed that a great number of these companies do not appear to be aware of the need to address this issue in their public communications. Only 50% of the companies have specific websites on climate change and one-third of the companies do not include any allusion to this matter on their corporate websites, despite the environmental impact of their economic activity. This is surprising if we take into account the relevance that citizens give to climate change and to corporate stances on this issue, as we explained in the introduction. If we examine the results in terms of the nationality of the company matrix, we see that there is a much greater awareness of the importance of climate change as a public relations issue in the West and in developed countries in general. All the Western companies (from the United States, Western Europe and Australia) have specific websites on climate change. This seems to correspond to the situation in other Western nations, such as Canada, Japan and Spain (Fernández-Vázquez & Sancho-Rodríguez, 2020a; Freedman & Jaggi, 2010). In Latin America, Africa and the Middle East, only the Arabian company Saudi Aramco and the Brazilian company Petrobas follow this public relations lead, while more than half of the non-Western companies lack allusions to climate change on their websites (58.33%). The results are summarised in Table 2. It is also relevant to mention that many of the environmental websites appear to be poorly developed, with a very limited number of images, which makes them unattractive for the non-specialised reader.

**Table 3.** Topic of images (participants).

| Topic | Greatest Polluters | NGOs |
|---|---|---|
| Nature | 9 | 93 |
| Technology | 61 | 42 |
| People | 21 | 113 |
| Nature/technology | 15 | 12 |
| Nature/people | 1 | 22 |
| Technology/people | 18 | 12 |
| Other topics | 5 | 17 |
| TOTAL | **130** | **311** |

Number of images for each topic.
Source: Authors' own creation.

This supports the idea that global companies need to develop greater efforts in their public communications concerning climate change in order to identify themselves as environmentally responsible agents.

Focusing on the visual analysis, the most remarkable aspect is the central role given to technology, which appears as the main participant in almost half of the images (46.92%) and is one of the relevant actors in almost three out of four pictures (72.3%). This contrasts strongly with the scarce presence of nature, which is the main participant in just 6.92% of the images, and with the limited role given to people (16.15% only). A deeper analysis reveals that most pictures which have people as main participants are pictures of the CEO or the managing team, with only 10 pictures referring to other persons (7.69%). The prevalence given to technological actors in the website images is consistent with the importance that technology has for the definition of corporate identity (Cheng, 2011). Still, it is surprising to find so few images with nature as a major participant on environmental webpages. This striking absence emerges even more clearly if we look at the situation on the NGO webpages, where nature is the main participant in 29.9% of the images and one of the main actors in 40.83% of the visuals. By contrast, technology appears as the main actor only in 13.5% of the instances (see Tables 3 and 4). The way in which nature is described also differs in the two subsets of images. The websites of the greatest polluters do not contain a single image which portrays the adverse consequences of climate change upon nature. In contrast, the NGO websites make frequent use of negative natural depictions, with 61 images creating negative connotations (19.61% of the total, see Table 4). A typical image on these websites is the grey smoke coming from a factory or the destructive effects of natural phenomena which derive from climate change, like deforestation. Interestingly, the NGO images do not only give maximum prevalence to nature. The preponderance is shared with a third actor: people occupy a marginal role for the global companies' visual discourse. On NGO websites, people appear as the main participant in more than one-third of the images (36.23%) and they are a main actor in almost half of them (47.27%). These results are consistent with previous research on Spanish IBEX 35 companies (Fernández-Vázquez & Sancho-Rodríguez, 2020a), but they show a greater tendency to ignore nature and people as visual participants on corporate websites, and a clearer orientation to highlight the importance of technology.

Our findings suggest that the narrative on climate change that the global companies are constructing as part of their corporate identity differs significantly from the narratives enacted by other social agents who are committed to fight against this

**Table 4.** Topic of images (participants).

| Topic | Greatest Polluters | NGOs |
|---|---|---|
| Nature as a single participant | 6.92% | 29.9% |
| Nature as one of the multiple participants | 19.23% | 40.83% |
| Technology as a single participant | 46.92% | 13.5% |
| Technology as one of the multiple participants | 72.3% | 21.22% |
| People as a single participant | 16.15% | 36.23% |
| People as one of the multiple participants | 30.77% | 47.27% |

Percentage of images in which nature, technology and people appear as single participant or as one of the multiple participants.
Source: Authors' own creation.

problem, like the NGOs. The abundance of technological images in the global company websites transmits the idea that climate change may be mitigated by the technological solutions and products which are associated with the economic activity of these corporations. The implicit belief in all-powerful technology which the images transmit conforms to 'the ecomodernist story' (Norton & Hulme, 2019), as one of the possible narratives that can be enacted to account for climate change. The ecomodernist story admits that humans need to control their impact on nature, but it rejects imposing limits to economic growth or taking nature as an autonomous entity to which humans are subjected. Instead, it argues that technological advances guarantee that climate change will be controlled without altering the current social and economic framework and without slowing down modernity. From a practical point of view, this narrative is useful for the economic interests of the global corporations, as it reduces the public's anxiety about environmental damage and induces people to keep their consuming habits intact. If climate change can be controlled by technology, then no radical, immediate actions should be taken, particularly if these actions come at an economic cost. At the same time, by association with a technocentric discourse, through the proliferation of technological images on their websites, these companies suggest that the products that they commercialise are environmentally harmless and can even be beneficial for nature. Consuming their 'technological' products is, to put it another way, a way of helping to mitigate the worst effects of climate change. There is, in this sense, an indirect appeal to the viewer to accept that corporations are the ones who need to take the lead in the fight against environmental problems by means of technology. The shocking scarcity of natural images on what are, after all, *environmental* websites confirms that the internet viewers' attention is subtly displaced from environmental care as an end in itself to an alternative mental framework in which nature is a secondary actor. This strategy of greenwashing (claiming to defend nature but actually subordinating environmental care to other goals) is corroborated by the limited role given to people, who are, once more, largely absent from the visual narrative (less than 10% of the images make reference to people other than the managing team). Again, this absence reinforces the value of technology, metonymically associated with the company's commercial products, and induces a certain passivity on the part of consumers. The solution to climate change rests in the hands of companies and their technological solutions. Hence, customers do not need to take any individual action, lest to change their consuming habits. In this sense, by inducing passivity on the part of the consumers, corporate visual narrative

**Table 5.** Connotations in the images.

| CONNOTATIONS | Greatest Polluters | NGOs |
|---|---|---|
| Nature with negative connotations | 0 | 61 |
| Technology with positive connotations | 4 | 25 |

Number of images with positive and negative connotations. Positive connotations are associated to the use of renewable energies. Negative connotations are associated to the destructive effects of climate change and the environmental crisis.
Source: Authors' own creation.

prevents or moderates ecological activism, which could be an obstacle for the companies' commercial interest ('business as usual').

A very different narrative emerges from the visual analysis of the NGO websites, where there are frequent references to nature, particularly to denounce the damage that the environment is suffering from industrial and technological activity. The relevant role which people assume on these websites indicates that the solution to environmental problems does not lie in the 'technological' products commercialised by companies but in the ecological actions undertaken by the consumers themselves. The potential contribution of technology to preserve the environment is acknowledged, as it can be perceived in the presence of images in which technology is associated with renewable energies. But the negative effects of industrial activity are also shown very clearly, as seen in the great number of images with negative connotations, which show the devastating effects of climate change (see Table 5). These negative connotations transmit the urgency of the climate crisis and the need to take radical, immediate actions. We find, therefore, a much less optimistic narrative than the 'ecomodernist' story, one that demands individual responses from consumers, diminishes the positive effects of technology, and situates natural protection as a higher value.

To see the extent to which these two narratives are promoted on corporate and NGO websites, we should also pay attention to the analysis of representational and interactional functions. As Table 6 shows, the proportion of conceptual images on corporate websites is greater than on NGOs', where there are more narrative representations (24.43% against 6.15%). The greater dynamism which NGO images exhibit is coherent with the idea of moving the viewer to action, something which is confirmed more clearly by the prevalence of images which contain an imaginary appeal to the viewer (see Table 7). On NGO websites, one out of four images 'demands that the viewer enter into some kind of imaginary relation with him or her' (Kress & van Leeuwen, 1996, p. 122). This symbolic appeal is generally realised through direct gaze, although the demand was also found to manifest itself by reproducing textual messages which address the viewer ('Raise your voice for people and the planet' or 'Create a climate-resilient and zero-carbon world', for example). In opposition to the NGO sites, global company webpage images contain a more limited number of appeals to the viewer (10%) and give priority to an interaction based on offer, which represents the participants as objects of contemplation. This difference in the use of the interactional function confirms the discrepancy between the two narratives in terms of agency: defence of human agency and ecological activism on NGO websites and promotion of corporate technological agency on company websites.

**Table 6.** Representational function in the images.

| Representational Function | Greatest Polluters | NGOs |
|---|---|---|
| Conceptual representation | 122 / 93.85% | 235 / 75.56% |
| Narrative representation | 8 / 6.15% | 76 / 24.43% |
| TOTAL | **130** | **311** |

Number and percentage of images with conceptual and narrative representation. In conceptual representations participants are static, in narrative representations they interact with each other.
Source: Authors' own creation.

**Table 7.** Interactional function in the images (gaze).

| Gaze | Greatest Polluters | NGOs |
|---|---|---|
| Demand | 13 / 10% | 75 / 24.12% |
| Offer | 117 / 90% | 236 / 75.88% |
| TOTAL | **130** | **311** |

Number and percentage of images which show demand and offer. Demand takes place when there is a symbolic interaction with the viewer.
Source: Authors' own creation.

## 6. Conclusions

The aim of this study was to determine the extent to which 20 global companies considered as the world's greatest polluters address climate change in the construction of their reputational identity and to examine the visual narratives that these companies promote on their websites. The visual analysis we carried out shows that a great number of these companies give a very limited role to the discussion of climate change on their corporate webpages. This is particularly true for non-Western companies, perhaps because the legal concerns and pressure from the media are not as strong as in the West. The interest that consumers and citizens show for the environmental crisis, and the demand for corporations to take a clear stance on this matter, makes it advisable to remediate this absence. The fact that some corporations include information on climate change on their webpages, unlike others working in the same sector of activity, gives the former a competitive advantage in terms of reputation and brand management. It would be unwise, in this sense, to disregard the need to pay attention to environmental digital communications, particularly given that updating information on corporate webpages is relatively simple and inexpensive. On a different note, many of the websites that we analysed contain a very limited number of images, as we can see very easily if we contrast them with NGO websites (an average of 6.5 images for the greatest polluters' websites against 25.9 on the NGO websites). Again, it would be advisable for companies to improve their visual discourse, including a greater number of pictures or videos on their environmental webpages, in order to make them more attractive and interesting for the general public. This strategy would complement the release of CSR reports, extending their PR policies to those stakeholders who are not seduced by technical or specialised information.

For those companies that have chosen to speak about climate change on their webpages, we can identify some common features in terms of visual messages. As the multimodal visual analysis has shown, corporate discourse on climate change links environmental care with technological advances, suggesting that technology is the best solution to mitigate the effects of the environmental crisis (cf. Fernández-Vázquez & Sancho-Rodríguez, 2020a). This association works to protect the economic

interests of the companies, convincing the readers that technological and industrial activities should be promoted. The visual discourse reproduced on corporate webpages ignores the environmental problems caused by economic development and industrial activity. Conversely, the link between the companies' products and technology creates the paradox of suggesting that consuming this merchandise (mostly oil derivatives) actually helps the environment. It is also worth noting that global company websites give a very limited role to people in visual representations, as we can see if we compare these websites with NGO environmental webpages in terms of the presence of human participants, narrative representations and interactional functions. Corporate climate discourse assigns a passive role to citizens and it places agency on the actions taken by the companies themselves, particularly through the use of technological solutions. This is in direct contrast to the call for action that we find in NGO climate discourses, where nature and people occupy a much more prominent position, as seen in their presence as outstanding participants in most website images. We find, therefore, two competing visual narratives, one which subordinates environmental care to economic development and which induces citizens to keep their consuming habits intact, and an alternative narrative that calls for explicit actions on the part of the individuals and which situates the protection of nature at the centre. Of course, it is perfectly understandable that global companies try to protect their business. Still, we believe that these companies could follow the example of some of the visual communication strategies that NGOs deploy on their websites. Giving a greater relevance to natural images, including the negative effects of this phenomenon, would show stakeholders that the company really cares about the environment and that it shares citizens' concerns about climate change. Likewise, including more images with people, in which narrative and interactive functions are present, would be a way of inviting customers to join the company in a common effort to create a better world, even if this process is complex and far-reaching. Rejecting greenwashing strategies and making people feel more involved in the actions undertaken by the company to protect the environment can only result in a better reputation and a higher social standing, which ultimately will also protect business.

We believe that the results of our study can help global companies to improve their environmental digital communications, realigning their PR strategies with social expectations. Our study also contributes to the existing literature on CSR discourse by applying an ecolinguistic and multimodal visual framework, an area of analysis which is still under-researched. This study is not, however, without limitations. The main limitation is the size of the corpus, which is too narrow and mostly focuses on companies from the oil sector. It would be desirable to expand this study with a larger selection of companies which belong to different sectors of activity, to see if the visual narrative strategies that we have identified correspond to the general situation of multinational companies. The results of previous investigations on a more local level (Fernández-Vázquez & Sancho-Rodríguez, 2020a), while still limited, support this possibility. On the other hand, the results of our study on visual discourse could also be extended to investigate verbal language, to see how visual and written narratives interact.

## Note

1. On the persuasive force of rhetorical strategies in business contexts see, for example, Díez-Prados (2019); Fernández-Vázquez and Álvarez-Delgado (2020a, 2020b); Fernández-Vázquez and Sancho-Rodríguez (2020a, 2020b); García-Gómez (2018).

## Disclosure statement

No potential conflict of interest was reported by the author.

## Funding

This investigation forms part of the long-term research Project 'EMOtion and language at work': The discursive emotive/evaluative FUNction in different texts and contexts within corporate and institutional work: PROject PERsuasion (EMOFUNDETT: PROPER)', financed by the Ministry of Science and Technology in Spain (reference FFI2013-47792-C2-2-P). We would like to thank our colleague Elena Ortiz Carrasco for her help in performing intercoder reliability tests.

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