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The green battle in the media: A framing analysis of environmental press coverage

Abstract

The analysis of environmental media coverage using framing theory allows us to study and compare its evolution over time and establish a typology to discuss how the media echoes environmental issues and controversies. In this article, we propose a framing typology for environmental discourses, based on previous typologies and expanded with the different interpretive frames we have identified in environment-related opinion texts published in two historical periods: the 1980s and the year 2018. This frame typology can be used in the analysis of reporting about environmental movements and conflicts, and to other practical cases of environmental hot topics like climate change. The analysis of the environmental discourse in the press can be very useful to establish the evolution of this type of discourse in our society and the predominant concept of nature at a particular time.

Keywords

Framing, environmentalist movements, environment, environmental communication, press.

1. Introduction

Environmental journalism as we know it today was born in the 1960s and 1970s, parallel to the emergence of environmental movements. The role of the media was key to turn public attention towards the environment from then on (Hansen, 2011, p. 8). From their origin in environmental information, local and environmental protests on specific topics –to protect natural spaces or prevent the construction of nuclear power plants, for instance– played a very important role (Taylor, 2000). Thus, the emergence of environmental journalism cannot be explained without considering the evolution of environmental movements.

Because most of these movements were essentially local, the first ideas about the environment and its defense were published in the local press (Meadows & Thomson, 2014). For this reason, studying the discourse in the local media in the first examples of environmental coverage and green movements can help us determine the evolution of such environmental discourse since then until the present day.

In Spain, we have a paradigmatic case in the media campaign against the urbanization of La Devesa del Saler (Valencia) in the first half of the 1970s (Mateu & Domínguez, 2011). This campaign has been analyzed from a framing perspective elsewhere (Mateu & Domínguez, 2017). This approach is the basis of the present article and it allows us, based on the study of local cases, to establish a framing typology for the environment, which can be used to analyze the evolution of environmental discourse.

1.1. *Framing: a useful tool to analyze environmental information*

The same event can be addressed from several approaches. Framing theory allows us to carry out an analysis of the different ways the media can communicate news about a specific topic. However, framing theory can encompass not only the construction of news but also the way these are received, because *frames* are mental structures that can be found in both the texts and the audience. As professor Baldwin Van Gorp (2007, p. 62) states: “frames seem to be everywhere, but no one knows where exactly they begin and where they end.”

One of the most quoted definitions of a *frame* was made by Robert Entman (1993, p. 51): “to frame is to *select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation* [emphasis in the original] for the item described.”

To identify frames, Gamson and Modigliani (1989) mentioned five framing devices: metaphors, exemplars, catchphrases, depictions, and visual images. For these researchers, frames would be the central idea around which interpretive packages organize. These, in turn, make up media discourse. Regarding the application of these devices to the analysis of environmental communication, Alison Anderson believes that they could be a useful tool to understand the construction of particular references (Anderson, 2014, pp. 51–52).

Some theorists have focused on the importance of frames in the communication process, understanding it as an inherent part of communication, whether intentionally or intuitively (Nisbet, 2009). In this sense, unframed information would not be possible. Moreover, each frame, as Matthew Nisbet (2009) reminds us, includes arguments for and against a certain topic, as well as neutral points. Therefore, we cannot infer the stance of a text on a particular topic looking at the predominating frame; we can only extract the ideological or mental framework.

Choosing framing as a theoretical framework for the analysis of journalistic texts can allow us to understand how “forces and groups in society try to shape public discourse about an issue by establishing predominant labels” in a more interesting way than other approaches such as agenda-setting (Scheufele & Tewksbury, 2007, p. 13).

In Spain, framing research is a relatively recent approach and, despite the steady increase in the number of works based on this theory, the field is not consolidated yet (Ardévol-Abreu, 2015). However, several works have made an effort to theoretically structure and analyze the discipline (López Rabadán, 2010; Valera Ordaz, 2016; Vicente Mariño & López Rabadán, 2009). In this sense, we must highlight the contribution made by Valera Ordaz (2016), who analyzed the “media bias” of framing communication studies in Spain, which had mainly focused on discourse analysis and new frames.

1.2. *Towards an environmental framing typology*

Environmental communication studies have paid special attention to discourse and how it is framed (Hansen, 2011). The one environmental area that has enjoyed the most attention in this sense is climate change (see, for instance, Carvalho, 2008; Maibach, Nisbet, Baldwin, Akerlof & Diao, 2010; Nisbet, 2009, 2010; or Pan, Opgenhaffe & Van Gorp, 2019). In Spain, despite the fact that most framing studies in the field of communication have been related to social or political communication matters (see, for instance, Cheng, Igartua, Palacios, Acosta & Palito, 2010; or Valera Ordaz & López García, 2014), we can also find some works focusing on environmental issues such as environmental disasters (Vicente-Mariño, 2010), climate change (Lopera & Moreno, 2014), natural spaces (Mateu & Domínguez, 2017) or risk communication (Castelló, 2010).

As we have seen, due to the success of this framework and its different interpretations, there are different approaches to framing theory. Several theorists have pointed out that the success of the theory has also evidenced some of its shortcomings (see D’Angelo & Kuypers,

2010, p. 3), in many cases derived from the multiple meanings of the term *frame* (Van Gorp, 2007, p. 60). As Scheufele (1999, p. 118) points out, the fact that there are multiple approaches to the theory from different perspectives has deepened the vagueness of the term: “As a result of the numerous approaches to framing developed in recent years, the comparability of empirical results obtained in these studies is rather limited.”

Some authors (Carrage & Roefs, 2004; Vliegthart & Van Zoonen, 2011) have pointed out that current studies in this area present some recurring deficiencies. Some of these are the reduction of frames simply to a thematic categorization of news, to ideological alignment, or the simplification of news production and reception ignoring aspects such as the communication landscape or the political context. Others have pointed out certain limitations when using this theory for visual analysis (Metag, Schäfer, Fuchslin, Barsuhn & Kleinen-Von Königslöw, 2016) or Internet memes (Ross & Rivers, 2019). The integration of *framing* within the agenda-setting model is another controversial point that has led to a division among scholars (Ardévol-Abreu, 2015; Valera Ordaz, 2016). This theoretical disagreement has resulted in a lack of conceptual definition and the fragmentation of the discipline, as pointed out by Vicente-Mariño and López-Rabadán (2009).

These manifold approaches occur also in the field of environmental communication research, where the different approaches, schemas, and frame typologies make it difficult to compare the different studies and reach conclusions about the evolution of environmental frames. In this sense, researchers such as Nisbet (2009, 2010) or Borah (2011) also include the tendency to establish new frame typologies with every study, without taking into account existing tradition, and Matthew Nisbet proposed a typology of scientific frames (Nisbet, 2009, 2010) that can be applied to future framing research. Following these works, in 2017 this typology was adapted to analyze the first environmental movements in the local press from Valencia, Spain, specifically in texts related to the natural space of La Albufera de Valencia (Mateu & Domínguez, 2017).

The present study is presented from the hypothesis that it is possible to apply this environmental framing typology to other episodes. It could prove useful to analyze the evolution of the discourse on environmental questions during different periods, as well as to compare the coverage of different environmental issues. Therefore, we propose the following research questions:

RQ 1: Which environmental frames are present in the press when they write about the environment?

RQ 2: What are the historical differences in the presence of environmental frames?

RQ 3: Are any environmental frames common to different environmental topics? And, in this sense, do any frames only appear concerning a particular environmental issue?

2. Methodology

The corpus of analysis were opinion articles (editorials, op-ed articles, and letters to the editor) published in two local Valencian newspapers *Levante* (*Levante-EMV* since 1989) and *Las Provincias*, during the 1980s and in 2018. Opinion texts are of particular interest to analyze the ideological alignment of a newspaper and its stance regarding social transformation (Day & Golan, 2005; Mitman, Nikolaev & Porpora, 2012). The different opinion genres in a newspaper allow us to know more about the arguments of different agents: the weight of editorials as conditioning for the rest of information in a medium (Blanco Castilla, Quesada & Teruel Rodríguez, 2013) or spaces where they can include arguments that would be out of place in other texts of the newspaper, as is the case with the letters to the editor (Young, 2013). The analysis of opinion pieces has allowed us to analyze the frames in the discourse not only of the newspapers' journalists and collaborators but also of the different stakeholders in the management and defense of the environment (politicians, environmental managers, environmentalists) and concerned citizens like the ones writing letters to the editor.

For the selection of the texts, different representative issues from the second half of the 1980s were chosen. At that time, the institutionalization of the environment was starting thanks to the first democratic governments. Newspaper libraries were manually searched for opinion texts related to this period. The goal was to choose texts published between 1984 and 1990 on topics such as land-use planning, Valencian natural spaces, urban green spaces, pollution, nuclear energy, and wildfires. In total, 379 texts from this period were analyzed. The sample was selected and tested by applying the initial typology by Mateu and Domínguez (2017) regarding the Natural Park of La Albufera to other environmental issues from the same period as the 2017 analysis, which focused on the second half of the 1980s as well. For 2018, apart from those same topics, climate change and global warming were also considered. To select the pieces published during that year, we used the digital newspaper libraries of *Levante-EMV* and *MyNews* –the latter was used to search for the texts from *Las Provincias*. In total, 137 texts from this period were analyzed. In this way, we obtained a sufficiently extensive and diverse sample, which covered a wide variety of issues at two different points in history.

For the analysis, the previous typology created by Mateu and Domínguez (2017) was used (Table 1), but open codification was added to establish new frames. Following these guidelines, the discourse of the texts was analyzed, taking into account framing devices as established by Gamson and Modigliani (1989): metaphors, exemplars, catchphrases, depictions, and visual images. Firstly, the texts written in the second half of the 1980s were studied. Thus, taking into account the most common resources used in the texts, we categorized existing frames and established new frames that were not present in the original typology. Then the same process was followed with the texts written in 2018. The characteristics of each frame are described below, in the results section.

Table 1: Frame typology applied to the study of the first environmental movements in the region of Valencia in the 1970s (from Mateu & Domínguez, 2017).

A FRAMING TYPOLOGY APPLICABLE TO ENVIRONMENTAL ISSUES

Social Progress: Nature appears as opposed to the idea of progress. While progress is seen as a positive issue, nature receives negative connotations. Progress necessarily civilizes nature, so people can enjoy it. Nature is then conceptualized as wild, dangerous, and uncomfortable for human beings.

Beauty: Nature is idealized, and its value is given by its beauty. Natural areas provoke admiration and have value for its aesthetic pleasure. Evocative adjectives and descriptions are often used to create visual images of the natural space. The use of terms belonging to the semantic field of beauty is common (e.g., the beautiful lake of the Albufera).

Identity Symbol: Nature, or a specific natural area, is considered as an emblem of a town, region or country. The texts where this frame is present refer to authors or artists that have associated this natural space with Valencian folklore. In this sense, references to Blasco Ibáñez's novel, *Cañas y Barro*, are very representative, but also the association of the Albufera with other elements of Valencian identity, such as *paella* or the Fallas festival.

Economic Development and Competitiveness: Nature is understood as a source of materials and its value depends mainly on its economic perspectives: agriculture, hunting, tourism, etc. Plenty of concepts referring to economic activities and its semantic field are used: way of life, right to property, jobs... This frame implies that society has the right to exploit nature to achieve its goals. For that reason, nature is always subject to people's interests.

Citizen Right: Nature is considered as a citizen right. In this sense, nature is an issue of public policy and the natural area is considered as a public good. This frame understands nature as an element for citizen leisure and enjoyment. Accordingly, there is a defense of the natural space, but at the same time, certain ecological policies collide with the total enjoyment of nature by people. The motto *El Saler per al poble* is one of the most remarkable examples of this frame. On the other hand, the texts where this frame is present refer to popular areas, public heritage, public use, etc.

Public Accountability: Environment is considered an intrinsic part of politics. This frame accepts and demands that politicians look after the environment and design specific policies to manage it, always considering it a citizen right. Texts within this frame use many law- and administration-related terms (the council and councilors, the bill...), and they also appeal directly to politicians.

Ecosystem Value: Nature conception from a scientific point of view that gives value to the ecosystem and the need to protect and preserve it. It is a scientific basis stance, but it can be adopted by other groups such as environmentalists. It is remarkable for its use of scientific lexicon, especially biology-related, as well as for its scientific descriptions and technical vocabulary. The texts containing this frame sometimes introduce or quote a scientist as an argument of authority.

Science as a Solution: Science and technology are presented as the only answer to the environmental problem. It is quite an optimistic frame regarding the future of the environment because it trusts scientific advances will solve any problem.

Conflict/Strategy: Battle of personalities or groups. Discourse polarization. Opposition to conservationist or environmentalist stances, which are consistently ridiculed or criticized. Conflict Science vs. Environmentalists. In these texts, the use of war metaphors and vocabulary is noteworthy, as well as the presentation of dichotomies such as the “us *versus* them”.

Source: Mateu & Domínguez, 2017.

3. Results: Environmental frames

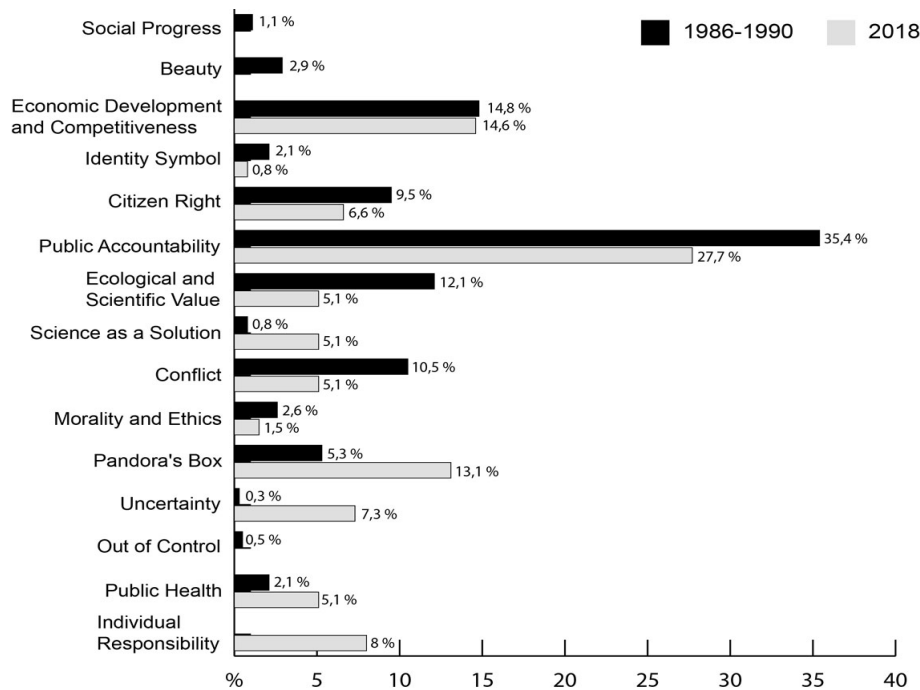
In addition to the frames included in the initial typology, 6 additional ones were identified: Morality and Ethics, Pandora’s Box, Uncertainty, Public Health, Out of Control, and Individual Responsibility. Moreover, we renamed the frame Ecosystem Value from the original typology to Ecological and Scientific Value, because the original term referred to the analysis of frames on natural spaces and we consider the current one adapts better to most environmental issues. Most of these frames can be found in both periods, but three of them – Social Progress, Beauty, and Out of Control – were only present in texts published in the 1980s, and Individual Responsibility can only be found in 2018 texts (see Table 2). In both periods, Public Accountability and Economic Development and Competitiveness were the most common frames (Figure 1).

Table 2: Presence of frames in the different eras and topics analyzed.

	Natural Spaces		Green urban spaces		Pollution		Nuclear energy		Wildfires		Land-use planning		Climate change
	80s	2018	80s	2018	80s	2018	80s	2018	80s	2018	80s	2018	2018
Social Progress	•		•				•						
Beauty	•										•		
Economic Development and Competitiveness	•		•		•	•		•	•		•		•
Identity Symbol	•	•	•								•		
Citizen Right	•	•	•	•	•		•		•	•	•	•	
Public Accountability	•	•	•	•	•	•	•		•		•	•	•
Ecological and Scientific Value	•								•	•			•
Science as a Solution					•	•		•					•
Conflict	•	•			•		•				•		•
Morality and Ethics	•						•						•
Pandora’s Box	•		•		•		•	•	•	•		•	•
Uncertainty					•								•
Out of Control	•						•						
Public Health	•	•	•	•	•	•	•						•
Individual Responsibility						•				•			•

Source: Own elaboration.

Figure 1: Percent distribution of frames present in pieces analyzed in the 1986–1990 period (the 1980s) and 2018.



Source: Own elaboration.

3.1. Frames that were only present in the 1980s

Social Progress

Nature is presented as opposed to the idea of progress. In general, progress is associated with positive characteristics (advances, social improvement, quality of life) while nature carries some negative connotations linked to a primitive and even wild past. Sometimes, nature is presented as an uncomfortable and often dangerous element, which can be tamed and enjoyed thanks to progress, as exemplified in the following text:

La causa de esta progresiva degradación debe buscarse, en gran medida, en el desarrollo industrial, que no ha tenido en consideración la protección del entorno. Es más, hasta se ha presentado esta última como factor contrario, opuesto al desarrollo, lo que divide a la conciencia ciudadana entre “esos ecologistas” y los que están a favor del progreso.¹

These texts refer to metaphors in which nature is presented as an obstacle to development: “l’horta com a corsé” (“market gardens as a corset/restraint”) refers to a 1988 text published in *Levante*. Or sometimes they refer to technical advances in contrast with the old times: “vaya repartiendo velas y máquinas a vapor para que nos alumbramos y las industrias funcionen...” (“start handing out candles and steam engines so that we can have light and the industries can run.”)

As shown here, nature is understood as a limit for growth and the advancement of society, and false dichotomies are presented, offering a choice between nature and progress. However, the use of this frame does not imply a pro-environment or anti-environment stance. This analysis has found that some texts used this frame to introduce an alternative

¹ “The cause of this progressive degradation is, to a large extent, to be found in industrial development, which has not taken environmental protection into account. In fact, the latter has even been presented as an opponent to development, dividing citizen concern between ‘those environmentalists’ and those who are in favor of progress” (Blanco, I. [1988, June 11]. Tres batallas para un solo capitán. *Levante*, p. 63).

interpretation where progress cannot be understood without respect and harmony with nature, under the idea of “sustainability.”

Beauty

It represents a concept of nature from a romantic perspective, according to which natural spaces are to be admired and have value because of the aesthetic enjoyment they produce. In this sense, these texts are noteworthy for their use of adjectives: “... presenta un paisaje encantador: los esbeltos pinos, de rectos troncos, compactos y frondosos, forman extenso y bellissimo bosque, con rincones maravillosos.”²

In many cases, visual postcards are presented to the reader through evocative descriptions, using common expressions (“costas que son bañadas por el mar Mediterráneo”)³ or a huge amount of adjectives and words related to the beauty semantic field.

Out of Control

It involves resignation when facing the negative consequences of technology, which are considered to be a price we have to pay to maintain our standard of living. These articles do not reflect on the need for a transformation or change, they assume that some technologies (nuclear energy, the use of cars...) are necessary for society to function and that their impact on the environment has to be accepted.

3.2. Frames that are present in both periods

Economic Development and Competitiveness

This frame implies that nature is understood in terms of the resources and benefits that can be extracted from it. This media frame has a strong anthropocentric component by which nature can only be regarded as a source of wealth. Consequently, the value of nature is based mainly on its economic potential, either through farming, hunting, tourism, or job creation. The articles that include this frame consider that society has the right to exploit natural resources to achieve its goals and that nature is hence subjected to the general interest.

The texts that use this frame and oppose the protection of nature value the economic benefit for society over ecological or social issues. Conversely, favorable texts communicate the idea that the protection of natural spaces can provide more benefits than the lack of protection. That would be the case of texts that support the idea that both landscape and biodiversity are tourist attractions, for instance. In this sense, some texts are introducing the concept of “sustainable development,” which redefines the frame and involves the emergence of new arguments.

In the texts where this frame is present, the semantic field of the economy (exploitation, economic interests, profitability) and economic activities (“la riqueza de la madera y del turismo de interior”)⁴ is common. An example of this type of frame can be found in the following text about the energy transition, which clearly considers environmental issues less important than economic ones: “El camino correcto de la evolución hacia sociedades más sostenibles debe pasar por un ambicioso plan de reducción del consumo energético, pero esto no lo van a querer las empresas ni los gobiernos, porque dada la estrecha relación entre crecimiento del PIB y consumo de energía primaria, el mito del desarrollo sin fin peligraría.”⁵

² “... it presents a delightful landscape: slender pines with straight trunks, compact and leafy, form a vast and beautiful forest with wonderful corners” (Beüt Belenguer, E. [1988, November 23]. *Penyagolosa: Majestuosa atalaya. Las Provincias*).

³ “Shores bathed by the Mediterranean” (Lluch, R. [1990, August 5]. *¡Salvemos la Albufera! Las Provincias*, p. 35).

⁴ “The richness of wood and rural tourism.”

⁵ “The right course towards more sustainable societies must pass through an ambitious plan to reduce energy consumption, but companies and governments will not accept this, because due to the close relationship between GDP growth and primary energy consumption, the myth of endless development would be endangered” (Albelda, J. [2018, March 28] *¿La hora del planeta? Levante-EMV*, p. 5).

Identity Symbol

Articles containing this frame reflect on the idea of nature as the identity symbol for a city or a country. These texts contain historical and literary references and symbolism. Thus, we find articles where the Mediterranean is considered a symbol of our culture and, consequently, of our identity, with references to Greek or Roman culture, considered the origin of our civilization. We can also find references to artists and authors who symbolized Valencia for a part of society, like Joaquín Sorolla or Vicente Blasco Ibáñez, who are easily recognized by the readers. The lagoon of L'Albufera de València, the peak of Penyagolosa, *l'horta de València*, or the Mediterranean are some of the spaces connected to Valencian identity. References to idioms and platitudes such as “la ciudad del Turia” (“the city of the river Turia”) are commonplace.

Citizen Right

The texts that include this frame consider nature a common good, heritage of all citizens. The idea implies comparing nature with other sorts of public heritage such as culture (works of art, architectural heritage, etc.).

On the other hand, sometimes the frame also includes a utilitarian conception of nature, because if we consider the environment a common good, the citizens have the right to use it for their interests, mainly recreational and leisure activities:

El seu futur [de les Moles] passa per convertir-se en el principal bosc periurbà de la comarca, un gran espai d'oci en contacte amb la natura on la població pugui accedir sense recórrer al transport privat i pugui gaudir d'un entorn natural molt a prop de la ciutat.⁶

This often makes conservationist regulations clash with those interests when access to nature is restricted to promote its protection. On other occasions, the texts suggest that nature protection should be limited to keeping natural areas clean and accessible to citizens. The concept of the environment as a common and collective good stands out. In this sense, many slogans can be found: *El Saler per al poble* (“El Saler for the people”) or *El llit és nostre i el volem verd* (“The riverbed is ours and we want it green.”)

Public Accountability

In these articles, we observe that the environment is considered extricable from political management. Citizens accept and demand that politicians take care of the environment and design specific policies to regulate it because those same politicians are directly and indirectly responsible for the protection and preservation of the environment. It is a logical consequence of the frame “Citizen Right,” because when the idea that nature is a common good is accepted and established, it becomes a matter of political management. Politicians, on the other hand, accept that the environment is one of their responsibilities. There is a politicization of the environment, which becomes a weapon in the fight between political parties and the institutional discourse. In the resources and references used by these articles, we can often find law-related, political, or administrative vocabulary, as well as a direct appeal to politicians. “Quiero dirigirme al señor conseller de Agricultura...”⁷ or “Exigimos soluciones integrales.”⁸

⁶ “The future [of Les Moles] is to become the main periurban forest of the region, a great leisure space in contact with nature where people can enjoy a natural environment very close to the city” (Fernández, R. [2018, April 1]. Les Moles, un punt d'inflexió en l'urbanisme valencià. *Levante-EMV*, p. 6).

⁷ “I want to address the councilman of agriculture” (García, M. [1986, September 12]. El incendio de Sierra Mariola [Letter to the editor]. *Levante*, p. 23).

⁸ “We demand comprehensive solutions” (Lubary, M. [2018, January 12]. La Albufera, en coma inducido. *Levante-EMV*, p. 3).

A common platitude or reference in the 1980s and 2018 is the mention that “los incendios se apagan durante el invierno” (“wildfires wane in the winter.”) This refers to the responsibility of political managers, which should be maintained throughout the year.

Ecological and Scientific Value

These texts understand nature from a scientific perspective. The reason to protect and preserve it lies in the value of the ecosystem. This is a science-based discourse, consequently used mostly by scientists (biologists, agricultural engineers, etc.). But this frame can also be found in the discourse of other groups, such as environmentalist groups, who adopt it to support the need to protect and preserve nature.

These texts are characterized by the use of scientific and technical terminology and the semantic field of biology in general: describing ecosystems, their characteristics, wildlife, plants... or describing physical phenomena and processes related to the environment and its degradation. References to the concept of *biodiversity* are usual. They also often use arguments of scientific authority (*argumentum ad verecundiam*). One example of this frame can be found in the following excerpt about forest fires:

Los incendios forestales reiterados y la riqueza en biodiversidad son poco compatibles. En la región mediterránea europea los incendios repetidos para un mismo lugar se sitúan entre los 20 y los 50 años, lo que imposibilita el establecimiento de bosques maduros y reduce drásticamente la biodiversidad.⁹

Conflict

This frame describes environmental issues in terms of confrontation. The texts reflect the polarization of a debate opposing the interests of two groups or figures. Most of these texts do not include explicit arguments for the preservation and protection of nature. The debate on environmental issues is in the background of a conflict, which is the true focus of these articles. Some strategies stand out, like the use of military terms, the creation of an “us vs. them” opposition, and the use of binary choices that force the reader to take sides without allowing for the possibility of grey areas.

A recurring confrontation is the one established between “environmentalists” or “city folk” and “countryside folk” (farmers, inhabitants of rural areas, hunters, etc.): “Es un gravísimo error dejar a una exigua minoría elitista y urbanista que imponga sus criterios frente a la mayoría del mundo rural.”¹⁰

But other conflicts are created between territories, between the interests of different governments, etc. One example of this is this text criticizing the Coastal Law, which establishes a “them” (the central government) and an “us” (Valencians): “Es la clásica ley hecha en Madrid, por un señor de secano, sin tener en cuenta cómo es nuestra costa.”¹¹

Pandora’s Box

Also known as “Frankenstein’s monster.” This frame implies approaching environmental issues from potential risks and threats. They anticipate disasters related to matters such as nuclear energy, the ozone hole, construction in floodable areas, or climate change: “A causa del calentamiento global disminuye el agua de muchos glaciares del norte del planeta, lo que

⁹ “The frequent forest fires and the abundance of biodiversity are not quite compatible. In the Mediterranean region of Europe, fires recur at the same location every 20 to 50 years, making it impossible for forests to mature and drastically reducing biodiversity” (Moya, B. [2018, August 11]. Cuando los incendios saben a rayos. *Levante-EMV*, p. 4-5).

¹⁰ “It is a very serious mistake to allow a meagre elitist and urbanist minority to impose its criteria on the majority of the rural world” (Pradells, F. [2018, February 8]. Por un pacto forestal valenciano. *Levante-EMV*, p. 3).

¹¹ “It is the classic law made in Madrid by a man from a rain-fed land without taking into account what our coast is like” (Reyna, M. C. [1987, August 22]. Costas: La ley más salvaje jamás contada. *Las Provincias*).

en un futuro no muy lejano puede provocar grandes inundaciones que devasten casi en su totalidad a países enteros”.¹²

The texts in which this frame predominates include alarmist –sometimes even apocalyptic– language. The consequences are taken to the extreme, in one case acid rain is related to the death of an entire county, and wildfires are said to be turning the entire region into a desert. They emphasize the negative consequences of the human impact on the environment. Thus, risk-related terms are common (danger, threat, horror, apocalypse, fear, alarm, etc.).

Public Health

These texts describe environmental matters in terms of their consequences for human health. Different questions related to the environment can have an impact on our health and quality of life due to an increase in diseases.

This frame is easily assimilated by the readers, it hits them in an issue that affects them and their health directly, so references to pollution-related conditions and diseases related to climate change are common. This is also a recurring frame in matters such as the need for green areas within the city. That is the case of this article discussing the consequences of “heat islands” in cities: “Ese exceso de calor nocturno, típico del periodo comprendido entre la segunda quincena de junio y la primera de septiembre, entorpece el bienestar y limita la capacidad de nuestro organismo para conciliar el sueño.”¹³

Morality and Ethics

This frame highlights the relationship with nature in ethical terms, sometimes from religion, sometimes simply as a moral dilemma: Is it right for humans to have total control of nature? Are humans selfish in their relationship with the environment? Or is the opposite true? Should we protect nature more than human beings? Such a reflection is made by the architect Carles Dolç when he discusses sustainability and the need to take care of the planet specifically in ethical terms, as doing what is right or what is wrong: “Su otra premisa es estrictamente ética: hay que cuidar la Tierra para que las generaciones futuras puedan también satisfacer sus necesidades. No es solo nuestra, también de los que vendrán [...]”¹⁴

Uncertainty

This frame presents a debate between science-based data and the unknown, or as a lack of consensus or scientific data. The debate is framed as scientifically accurate data against alarmist or unreliable information. This article is an example where data is presented, and where the main criticism of the author (a meteorologist) comes from the fact that what was happening was not a cold front nor could it be attributed to climate change:

Desde los numerosos medios de Madrid saltó la noticia: “La gota fría se adelanta en el Levante español por el cambio climático”. Insólito, oiga, que en el sur del Golfo de Valencia y en el norte de Alicante llueva con fuerza a mediados de agosto. [...] Podemos discutir

¹² “Due to global warming, the amount of water in many glaciers in the north of the planet is decreasing, which in the near future could cause great floods that would almost completely devastate entire countries” (Mangod Pérez, D. [2018, May 11]. La verdad sobre el calentamiento global. *Levante-EMV*, p. 6).

¹³ “This excess of nocturnal heat, typical of the period between the second half of June and the first half of September, disrupts our well-being and limits our organism's ability to fall asleep” (Aupí, V. [2018, June 18]. Junglas de asfalto y noches tropicales. *Levante-EMV*, p. 59).

¹⁴ “The other premise is strictly ethical: the Earth must be cared for so that future generations can also satisfy their needs. It is not only our planet but also that of those who will come” (Dolç, C. [2018, April 19]. Sostenibilidad. *Levante*, p. 8).

otras cosas, pero como sabemos los que vivimos en la zona, estas situaciones son habituales en este sector a mediados y finales de agosto.”¹⁵

In this sense, we can find articles based on scientific uncertainty to reject some aspects of environmental problems, and in many cases, they use one of the characteristics of science to cast doubts on its conclusions. This is widely used in the field of climate change to deny the existence of its anthropogenic causes. In 2018 we still find examples of this:

Otro gran problema mundial es el conocido como el cambio climático. Una indiscutible realidad, pero muy esencialmente desconocida en sus causas y arteramente manipulada por oportunistas. [...] Quienes nos hemos interesado profesionalmente por la paleontología sabemos sin ninguna duda que el hombre, aparecido muy al final de la historia de la Tierra, no pudo influir en infinidad de cambios climáticos, muchísimo más radicales que el actual, que ocurrieron en los últimos seiscientos millones de años.¹⁶

Science as a Solution

It involves optimism concerning our environmental future, based on potential scientific advances. This frame poses that science will solve any upcoming environmental problem. This idea sometimes implies not taking other measures to remedy environmental problems, because their proponents believe that the solution will arrive sooner or later. An example of this is the following article about plastic pollution:

... la tecnología vendrá a salvarnos de lo que la falta de educación y conciencia no nos libra. La tecnología para fabricar nuevos plásticos biodegradables y los ejércitos de bacterias que lo digerirán deprisa.¹⁷

3.3. One frame exclusive to 2018

Individual Responsibility

One frame was identified in 2018 that had not been detected in the 1980s or the previous work, based on the first half of the 1970s (Mateu & Domínguez, 2017). This frame emphasizes the individual responsibility of each citizen and consumer to protect the environment, thus diluting political responsibility and the social responsibility of big companies: “Los ciudadanos desempeñamos también un papel clave en la lucha contra el calentamiento global.”¹⁸ This frame emphasizes individual action over collective action, and it focuses on the responsibility of citizens as individuals. These texts promote action in everyday activities such as mobility or recycling (“reciclar, depurar, reaprovechar”)¹⁹ and include calls to raise awareness and to improve our behavior.

¹⁵ “The news broke from the numerous media in Madrid: ‘The cold snap comes early in the Spanish Levante area because of climate change’. It seems that they find it very unusual that in the south of the Gulf of Valencia and the north of Alicante it rains heavily in mid-August. [...] We can discuss other things, but as those of us who live in the area know, these situations are common in the area in mid and late August” (Blener, S. [2018, August 25]. Diluvios litorales en agosto. *Levante-EMV*, p. 55).

¹⁶ “Another major global problem is what is known as climate change. An indisputable reality, but essentially unknown in its causes and artfully manipulated by opportunists. [...] Those of us who have been professionally interested in paleontology know without any doubt that man, who appeared at the very end of the history of the Earth, could not influence an infinite number of climatic changes, much more radical than the present one, which occurred in the last six hundred million years” (Casielles, J. M. [2018, October 4]. *Levante-EMV*, p. 3).

¹⁷ “...technology will come to save us from what lack of education and consciousness cannot free us from. The technology to make new biodegradable plastics and the armies of bacteria to digest it quickly” (Lladró, V. [2018, June 10]. Nos salvarán las bacterias. *Las Provincias*, p. 35).

¹⁸ “We as citizens also play a key role in the fight against global warming” (Aguado Sáez, J. F. [2018, January 4]. El paradigma de la chinche roja. *Levante-EMV*, p. 6).

¹⁹ “Recycling, purifying, reusing” (Piera, E. [2018, February 12]. Planes de vida. *Levante-EMV*, p. 4).

4. Discussion and conclusions

The analysis of media frames in environmental articles allows us to study the evolution of media coverage on these issues. Trying to integrate and establish a typology for environmental communication is interesting and can benefit research in several aspects, identifying and conceptualizing common and recurring frames.

The original typology has been useful to analyze environmental issues of a different nature. However, the particular characteristics of each issue (environmental conflicts, nuclear energy, natural spaces, wildfires, etc.), as well as the cultural, political, and economic aspects of their context, favor the emergence of new frames or the disappearance of others. But in general, several frames are common to the different topics and to both time frames, which implies that some environmental frames are transversal to different issues.

The proposed typology can make it easier to analyze phenomena at different scales and to compare the coverage of different environmental episodes, and it allows to observe the evolution of environment-related opinions. Therefore, this methodological tool can be very useful to compare similar events at different points in time, or environmental conflicts with different characteristics.

If we analyze the presence of frames in the different periods, we can observe that the Social Progress frame is present in the 1980s, but not in 2018. While it is true that we would need a wider sample to determine if this involves a change of paradigm in the conception of the environment, we can venture that this confrontation between nature and progress –where progress was understood as positive evolution– has been left behind. Something similar occurs with the Beauty and Out of Control frames, which are not present in 2018. The fact that these frames are not present in the sample does not necessarily mean that they have disappeared today. A more extensive sample would be necessary to determine this possibility. Nonetheless, it might be indicative of a trend.

The appearance of a new frame, Individual Responsibility, is also interesting. After the importance of the Public Accountability frame in the 1980s (Mateu & Domínguez, 2017), now we have a new frame emphasizing individual action as a response or solution to environmental problems. A deeper analysis using a larger sample from a wider variety of sources would also be necessary to correctly establish the characteristics of this frame, which may also be related to the increasing individualization of society and a loss of confidence in governmental action.

The most common frames in texts belonging to different periods and topics are Economic Development and Competitiveness, Citizen Right, Public Accountability, Pandora's Box, and Public Health. Regarding those frames that were detected only relating to a particular topic, we have Uncertainty, which was found in the 1980s in matters related to pollution, but in 2018 is only present in texts about climate change. This is a noteworthy frame because in most cases we find it in texts that completely or partially reject the existence of climate change or its anthropogenic causes. In this sense, we can observe that there are frames that are used only with particular issues, while others are transversal and are used in different environmental events or topics. Furthermore, the emergence of new frames and the disappearance of others gives us some key information about the evolution of environmental stances in society. Using the same typology in the diachronic analysis can help us to consider the time dimension in the analysis of environmental frames, increasing the applicability of the results to compare environmental framing over time, following the observations made by Schäfer and O'Neil (2017) about frame analysis in climate communication and environmental communication in general.

In this way, we have established an environmental frame typology which does not need to be final, because it is subjected to the evolution of the social discourse about the environment. It can, however, be useful to detect the emergence of new environmental frames

and the disappearance of others, as well as to compare the coverage on environmental issues in different geographical spaces. The present sample has been limited to local Valencian newspapers, although the issues are sufficiently universal and can be a starting point for the comparative analysis of press coverage and environmental discourse in Spain and beyond its borders. There is still a long road to walk in the research of environmental communication. The environmental frame typology developed in this text can help future research in this respect, extending the analysis to current issues that generate media controversy, so that the typology can be perfected and the evolution of environmental frames can be studied.

Identifying environmental framing can be useful for political actors, science communicators, and environmental organizations. Previous works on framing science and environmental issues have shown how citizens react or construct their perceptions about an issue depending on how this issue is framed (Maibach *et al.*, 2010). In this sense, we must wonder, like Cacciatore, Scheufele, and Iyengar (2016), whether or not it is possible to increase the effectiveness of a message by modulating the way information is presented.

Different works have analyzed the effect of using certain frames to communicate environmental matters. In the field of climate change research, some researchers have pointed out the importance of aspects such as the human interest and informational value of the health frame (O'Neil, Williams, Kurz, Wiersma & Boykoff, 2015), and Maibach *et al.* (2010) recommend this approach to engage the public. Some researchers such as Olausson and Berglez (2014) have pointed out that focusing the discourse only on the need to change individual lifestyles –like choosing public transport or recycling– prevent the creation of social awareness on the need to make political decisions. On the other hand, in-depth coverage of climate summits or focusing on political management to prevent risks can spread the feeling among the audience that environmental issues are detached from common citizens and have to be solved by the politicians alone (see Carvalho, 2007; Olausson, 2011; Olausson & Berglez, 2014). Therefore, framing environmental information as Individual Responsibility or as a Public Accountability issue would have different effects when communicating issues such as climate change or pollution, to name but a couple of examples.

Hence, identifying environmental frames –their characteristics and resources– is essential for the effective communication of green issues, and the present typology can be useful in this task. However, research in this field must go much farther and analyze how the different environmental agents frame their information, and which frames are used by whom, as well as their presence in spaces other than the media, to learn more about their effectiveness and pervasiveness in the different audiences. In this way, environmental framing theory can help us to reformulate and redefine green messages to more effectively reach and connect with the public.

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