

## The Semiotics of Environmental Crises: Symbols of Extinction

Bekir Derinöz<sup>\*1</sup>

<sup>1</sup>Department of Geography/Faculty of Arts and Sciences, Balıkesir University, Türkiye

\*(bekirderinoz@balikesir.edu.tr)

(Received: 20 March 2025, Accepted: 20 March 2025)

(6th International Conference on Innovative Academic Studies ICIAS 2025, March 12-13, 2025)

**ATIF/REFERENCE:** Derinöz, B. (2025). The Semiotics of Environmental Crises: Symbols of Extinction. *International Journal of Advanced Natural Sciences and Engineering Researches*, 9(3), 404-411.

**Abstract** – Environmental crises have gone beyond being merely ecological problems and have become global concerns that need to be examined in cultural, political and semiotic dimensions. This study aims to examine how environmental extinction and ecological destruction are symbolized by focusing on the semiotic analysis of environmental crises. In particular, how are natural disasters, climate change and environmental collapse represented in media, art, literature and political discourses? Which images, metaphors and narratives shape the perception of environmental disasters? In this context, the research investigates how environmental crises are embedded in social memory, through which symbols they gain meaning and how these signs affect political-ecological discourses. The main research questions of the study are as follows: How are environmental crises visualized? Through which semiotic markers are these crises presented? How do the resulting signs shape individual and social perceptions? The study is evaluated within the theoretical framework of Peirce and Barthes' semiotic theories. In the research, the representations, linguistic expressions and symbolic elements of the visuals associated with environmental disasters are analyzed from a semiotic perspective. The findings reveal that certain symbols and narratives are frequently repeated in the depiction of environmental crises and reinforce ecological concerns. This study reveals that the crises that lead to environmental problems do not only have a scientific aspect, but these environmental crises are also created culturally and semiotically. In addition, the socio-political structure of environmental crises and the structure of meaning they gain within the context of discourse are closely related to semiotics.

**Keywords** – Environmental Semiotics, Ecological Crises, Climate Change, Environmental Destruction, Media Representation.

### I. INTRODUCTION

In the 21st century, many environmental crises, especially climate change, have become serious problems on a global scale. These problems threaten ecosystems and create difficult problems for humanity. At this point, the media emerges as an important tool that shapes perceptions of environmental problems. The media has a wide variety of forms of expression. Therefore, the media is an important tool in terms of how the public understands and perceives environmental crises (Boykoff, 2008).

Semiotics is, in its simplest definition, a discipline that examines signs and symbols. Semiotics is also interested in how various environmental problems are covered in the media. At this point, semiotics examines various signs and symbols in media images. It is known that most of these symbols convey another underlying message. In fact, an ideological thought can often be conveyed in this way. This approach offered by semiotics enables us to reveal how certain media narratives are produced, what they mean, and how they are perceived by the public (Chandler, 2007).

The media generally uses a series of visual materials to convey environmental problems. These visual symbols used can have various, sometimes even multiple, meanings. For example, graphic designs used in environmental awareness-raising efforts are actually semiotic communication tools used to convey important messages about sustainable development and nature conservation. A study on the role of semiotics in this regard shows that effectively prepared visual graphics increase responses to environmental problems and encourage sustainability (Peverini, 2014). This situation reveals the impact that visual semiotics can have on environmental problems and society's perceptions of environmental problems (crises) at a societal level.

Various strategies have been used in awareness campaigns regarding environmental problems from the past to the present. In this context, non-traditional strategies have been examined in this study. The semiotic examination of non-traditional strategies has revealed that these strategies produce unexpected and striking results regarding environmental problems. Here, the media functions as a tool that directs the way environmental problems are perceived (Peverini, 2014).

The semiotic approach emphasizes the dynamics of the elements presented in the media. Semiotic readings can influence social attitudes and public discourse. However, the messages produced by the media are not always simple. Sometimes they can lead to misinterpretations and even reinforce established prejudices. For example, environmental crises are often addressed in media news at political, economic and cultural levels. While some aspects of environmental problems are highlighted, others can be ignored. This can lead to a perception that does not fully correspond to reality (Boykoff & Boykoff, 2004).

How are environmental crises reflected in the media? A semiotic perspective is needed to answer this question. Because semiotics helps develop effective communication strategies. Through semiotics, the visual and linguistic elements presented in the media can be addressed at the level of secondary and even tertiary messages they convey. This represents a critical examination in some ways. This critical assessment enables strong public participation in the development of sustainable environmental policies and the design of environmental campaigns (Chandler, 2007; Peverini, 2014).

## II. PURPOSE, RESEARCH QUESTIONS, AND METHODOLOGY

This study is theoretical research that examines how environmental crises such as climate change, biodiversity loss, and ecological destruction are depicted in media and cultural discourse. The research focuses on identifying the basic semiotic structures underlying these crises and how visual and linguistic representations affect public perception, political discourse, and policy making. The study analyzes semiotically how environmental narratives emerge and spread, and focuses on the symbolic mechanisms of media images.

The main research questions of this study are: How are environmental crises visually and linguistically reflected in the media? Which semiotic signs are commonly used to represent climate change and ecological destruction? How do these representations affect public perception and political responses?

This research is a conceptual and interpretative research. Therefore, the study does not focus on a specific period or geographical area. A semiotic methodology based on the theoretical frameworks of Charles Sanders Pierce and Roland Barthes is applied in the study. In this context, how symbols construct

narratives about ecological crises is examined through existing literature, semiotic theory, environmental discourse analysis, and critical engagement.

### III. LITERATURE REVIEW

The literature on environmental issues is quite extensive. Numerous studies have examined these environmental issues and investigated how environmental crises are portrayed by the media. Scientists have preferred to use semiotic analyses to understand how visuals affect public perception and behavior. The literature review conducted so far provides a general view of some studies within this extensive literature. Each of these studies presents important findings regarding environmental communication and semiotics, their relationships and meanings.

In his research, Peverini developed emotional and cognitive responses and focused on the use of semiotic resources. Peverini conducted research on unconventional strategies in environmental awareness campaigns. He analyzed various texts and visual elements. He applied semiotic approaches that can be called innovative on the audience and investigated how they can create a lasting effect and how they can create environmental awareness (Peverini, 2014).

In the study conducted by Valverde-Gordi and Marin-Roig, sustainable tourism destinations were examined, and in addition to the environmental campaigns promoting these destinations, the graphic designs used in these campaigns and the role of semiotics in these graphic designs were examined. In the study, it was shown that visuals and other representations meticulously designed with determinations based on semiotic principles significantly increased public participation and even provided significant gains in terms of protecting natural and socio-economic resources (Valverde-Gordi & Marin-Roig, 2023).

The study conducted by Tohamy is related to the environment and advertising and examined how visual semiotic resources are used in a field that can be called environmental advertising. During this study, Tohamy conducted research on how various elements with certain designs reflect environmental problems and how they are perceived, and investigated the messages conveyed here and how they are conveyed. The study results show how strategically semiotic elements are used in advertising activities and how public participation in environmental problem response activities can be increased and how sustainable environmental behavior can be encouraged (Tohamy, 2022).

A study by Chouliarakis is quite interesting. In this study, the author worked on the mediation of "pain". The issue addressed here is actually how the media creates a perception in society regarding environmental disasters. He worked on how pain is depicted and perceived at the societal level. The research mainly evaluated the relationship between semiotics and environmental issues and the role of narratives in how social participation in environmental issues is affected (Chouliaraki, 2006).

Frermann and others have examined media narratives, as well as how and in what way media conflicts, media accusations, and solutions are presented in the media. The narratives in these studies reveal important models for media design. The study examines how and in what way environmental crises are depicted on the media platform and how and to what extent this affects public opinion and political discourse (Frermann, Khanehzar, & Mikolajczak, 2023).

Luo and others have examined global warming and addressed media positions on this environmental issue. In their study, they have evaluated how opinions in media positions are formed and presented. The results of the research reveal that similar methods are generally used in media outlets in terms of expressions about global warming and the issue is expressed visually and linguistically through similar tools. According to the results obtained at the end of all these determinations, this situation is effective in increasing social participation in environmental reactions (Luo, Card, & Jurafsky, 2020).

O'Neill and Smith have addressed climate change in their studies. The authors have conducted research on various visuals and visual discourses related to climate change. In addition to visual

discourses related to environmental problems, the study also examined editorial processes. They have addressed how environmental problems are included in the public agenda, the importance and function of perspectives on this issue and the texts in the media. They have emphasized how important a tool semiotics is in this entire process (O'Neill & Smith, 2014).

In another study conducted by the Boykoffs, they have studied how the emerging environmental problems related to climate change are covered in the media. Important findings were obtained in this study. Among these, it is important that the authors emphasize that the news in the press can be distorted. In addition, the authors have stated that basic journalistic norms can be misused in this regard. As a result of this research, the authors' findings have essentially revealed how journalism can go beyond the norm in a manipulative way and become unbalanced. Another important conclusion that can be drawn from this study is that it draws attention to the importance of media literacy in understanding environmental problems (Boykoff & Boykoff, 2007).

In a comprehensive study by Schaefer and Schlichting on how climate change is covered in the media, they focused on how the visuals in the media affect the public's views and the views on the political actions that follow. The research results show that media visuals and representations increase the rate of support for actions. According to the authors, the media closely affects and shapes environmental discourses in particular (Shaefer & Schlichting, 2014).

Luke and other researchers have examined the balance between media outlets operating globally in the context of climate change, both nationally and regionally. The study essentially offers a comparative perspective. The results of the study reveal the power of media outlets to shape public perception and reactions at the political level (Luke, Wessler, Wozniak & Licario, 2018).

All the studies examined in the literature review conducted so far have basically tried to reveal how environmental crises are covered in the media, what they mean and what kind of reactions they evoke. The common result obtained from all the studies is that the media affects the perception and understanding of environmental problems with the visual and other semiotic elements it produces and designs the public opinion and even politics in a certain direction. At the same time, the media transmits many messages through various visual and textual semiotic elements and these messages can often reflect the underlying implicit ideological messages.

#### IV. FINDINGS AND DISCUSSION

The results of the study generally show that semiotic analysis of media representations of environmental crises reveals complex layers of meaning that significantly affect public perception and participation. This study examines various studies and identifies patterns in how environmental issues are depicted, and the effects of these depictions are presented here.

Another striking finding from the findings obtained within the scope of the research is the situation related to the use of visual materials in environmental awareness campaigns. The issue of strategic use of graphic design in this regard is interesting. This issue was addressed in the study conducted by Valverde-Gordi and Marin-Roig (2023) and it was determined that semiotic materials enriched with graphic designs increased social participation in environmental problems. They stated that these increased activities at the social level also promoted sustainable tourism in particular, and thus, natural, cultural and socio-economic resources were also protected.

Social media platforms are widely used today. These platforms are active environments where visuals related to environmental issues are frequently shared. Therefore, it becomes easier to spread environmental issues and reactions to these issues in these active and dynamic environments. The issue of environmentally "inappropriate waste" that we frequently encounter in social media environments, how this issue is depicted and how this issue is understood is an issue that needs to be carefully considered. Ultimately, the media elements in question are actually a produced environmental record. And these

records are intertwined with semiotics and are compatible with semiotic analysis. Therefore, this material in digital media environments provides an important platform for how this issue is shaped and given meaning in an environmental sense (Figure 1).

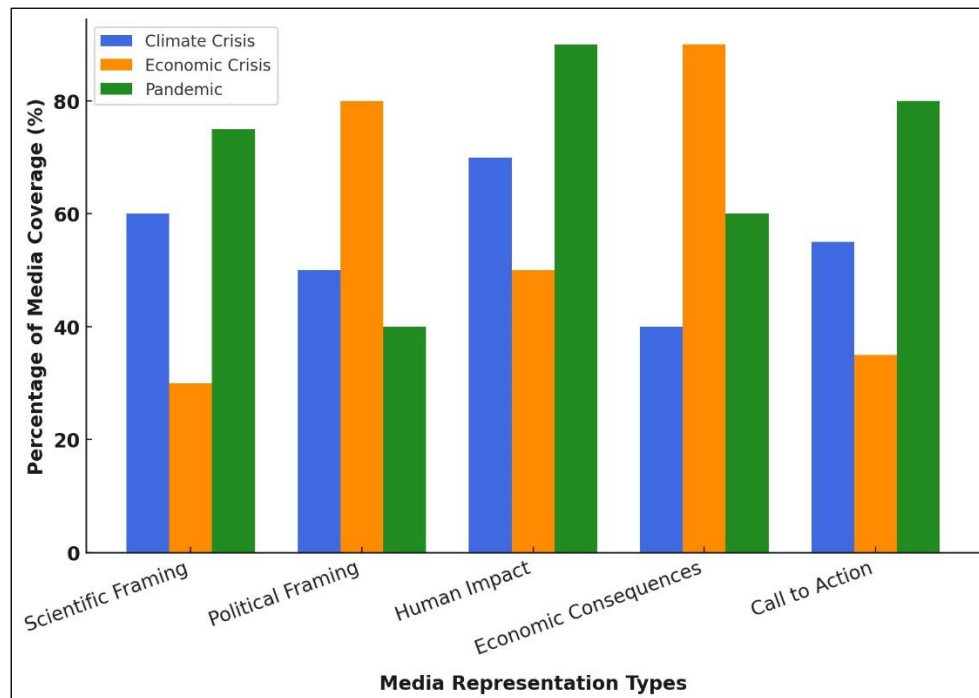


Figure 1. Comparing media representations of environmental crises

(Source: This figure was prepared based on the findings of Boykoff & Boykoff, 2007; Schafer & Schlichting, 2014; Frermann et al., 2023; Lück et al., 2018; Luo et al., 2020 & Anderson, 2017).

Another finding of the study is related to non-traditional media. When evaluated from a semiotic perspective, it is revealed that various strategies used in non-traditional social media advertisements provide significant advantages and when evaluated from a semiotic perspective, these strategies are quite important in creating environmental awareness. Peverini (2014), who conducted research on this subject, investigated how semiotic approaches, primarily textual, used in social media advertisements can effectively communicate environmental issues at various levels. As a result of this research, it was determined that strategies used especially in non-traditional media platforms can increase public participation and awareness on this issue.

This study also includes other findings about the built environment on social media. It is noteworthy that various representations on social media are examined from a biosemiotic perspective. This biosemiotic approach takes into account the interactions between nature and culture. Considering these interactions, semiotics provides a good tool model for investigating the representations used online on the platform between urban areas and environmental practices.

Another conclusion obtained from the study is related to the representations of climate change. It is seen that visual discourse analysis methods are used in particular in order to critically evaluate these representations on the subject of climate change. The analysis obtained using these methods brings with it a number of effects. The most important of these effects are the editorial decisions on which the various effects on the depiction of climate change are based, various prejudices on this subject at the societal level, and the status of the sub-messages underlying the main message conveyed. How do the semiotic images produced on the subject of climate change limit the reality of climate change? How do they shape it? How do they direct public opinion and policy on climate change? The answers to these questions can only be found by examining the subject from a semiotic perspective.

This study uses semiotic analysis to examine the role of environmental cartoons in the portrayal of environmental crises. Humor and satire in visual media can make complex environmental problems more understandable. They facilitate public access and can influence attitudes and behaviors. In this context, cartoons are particularly relevant as semiotic texts.

The study shows that visual semiotics plays an important role in environmental advertising. Advertisers deliberately use semiotic means to effectively convey environmental messages. Tohamy (2022) emphasizes that the targeted use of these resources can promote public participation. This makes environmental communication more persuasive and reaches more people.

The combination of semiotics with environmental sciences helps to understand the effect of signs and symbols on environmental perceptions. The analyzed literature shows that semiotic elements increase environmental awareness and promote nature conservation. Media portrayals of climate change, in particular, influence public opinion. They can either encourage engagement or cause indifference. A central concept is "ecomedy." She examines how environmental issues are portrayed in film, television, music, and video games. Media not only reflect environmental images, but actively shape them and influence social processes.

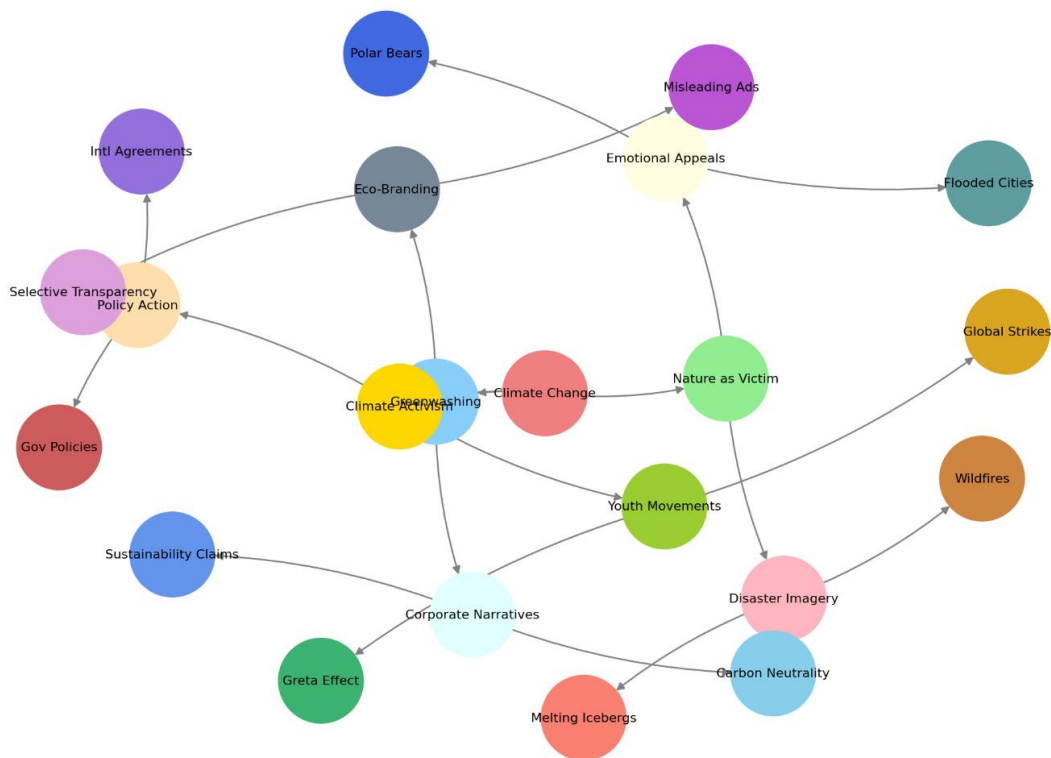


Figure 2. Diagram of semiotic representation of the environmental issue of climate change

(Source: This figure was designed based on Barth, 1972; Pearce, 1931; O'Neill and Smith, 2014; Valverde-Gordi and Marin-Roig, 2023; Peverini, 2014; Schaefer and Schlichting, 2014).

## V. CONCLUSION

The semiotic analysis of the media is an important issue to focus on. In this study, it is investigated how the visual and linguistic structures in the media produce results in the perception of environmental crises that occur within the scope of environmental problems and how they shape these perceptions. The media essentially uses a number of complex symbols to depict various environmental problems. These symbols, icons, and narratives affect various images such as melting glaciers, burning

forests, or arid landscapes, where a fundamental environmental problem such as climate change comes to the fore. At the same time, these symbols evoke strong emotional reactions. Another function of these symbols is that they can create a sense of urgency at the social level. They can convey this feeling or create the opposite effect and calm everything down. In addition, linguistic materials also affect social awareness and even political discourse. It is important to understand these complex mechanisms. Because these mechanisms are valuable in terms of showing how environmental communication turns into active action, how it can create and strengthen interest or indifference in environmental issues.

The combination of semiotics and environmental studies provides an important and different perspective between disciplines. As it is known, environmental crises do not exist in isolation. Ultimately, these crises are actually closely related to social structures, historical narratives and economic interests. Therefore, examining, understanding and resolving these problems is possible by being able to make and understand the analyses offered by complex structures such as semiotics. The analysis of semiotic structures that stand out in relation to environmental problems does not only address how environmental problems are depicted in the media. This analysis also has the ability to reveal the ideological and political forces behind visual elements. In the modern world of our age, digital developments are accelerating and narrative forms are changing. Social media users in particular are the scene of many dynamic formations and productions. In this huge digital world, false transmission or misinformation is unfortunately possible in almost every field, including the subject investigated here. Examining this manipulative environment from a semiotic perspective can help solve this complexity. Thus, we will have new ways and methods to produce more sustainable, innovative and effective solutions to environmental problems and the crises they cause.

Note: This study does not require ethical approval.

## REFERENCES

- Anderson, A. (2017). *Media, environment and the network society*. Palgrave Macmillan.
- Barthes, R. (1972). *Mythologies*. Hill and Wang.
- Billett, S. (2010). Dividing climate change: Global warming in the Indian mass media. *Climatic Change*, 99 (1-2), 1-16.
- Boykoff, M. T. (2008). The cultural politics of climate change discourse in UK tabloids. *Political Geography*, 27 (5), 549-569.
- Boykoff, M. T., & Boykoff, J. M. (2007). Climate change and journalistic norms: A case study of US mass-media coverage. *Geoforum*, 38 (6), 1190-1204.
- Chandler, D. (2007). *Semiotics: The basics* (2nd ed.). Routledge.
- Chouliaraki, L. (2006). *The spectatorship of suffering*. SAGE Publications.
- Frermann, L., Li, J., Khanehazar, S., & Mikolajczak, G. (2023). Conflicts, villains, resolutions: Towards models of narrative media framing:2306.02052.
- Hansen, A. (2018). *Environment, media and communication*. Routledge.
- Hansen, A., & Machin, D. (2013). *Media and communication research methods: An introduction to qualitative and quantitative approaches*. SAGE Publications.
- Lester, L. (2010). *Media and environment: Conflict, politics and the news*. Polity Press.
- Lück, J., Wessler, H., Wozniak, A., & Lycario, D. (2018). Counterbalancing global media frames with nationally colored narratives: A comparative study of news narratives and news framing in the climate change coverage of five countries. *Journalism*, 19, Issue 12, pp. 1635–1656, ISSN: 1464-8849.
- Luo, Y., Card, D., & Jurafsky, D. (2020). Detecting stance in media on global warming:2010.15149.

- O'Neill, S., & Smith, N. (2014). Climate change and visual imagery. *WIREs Climate Change*, 5(1), 73-87.
- Peirce, C. S. (1931-1958). *Collected papers of Charles Sanders Peirce* (Vol. 1-8). Harvard University Press.
- Peverini, P. (2014). Environmental issues in unconventional social advertising: A semiotic perspective. *Semiotica*, (199), 219-246.
- Schafer, M. S., & Schlichting, I. (2014). Media representations of climate change: A meta-analysis of the research field. *Environmental Communication*, 8(2), 142-160.
- Tohamy, M. (2022). A Visual Social Semiotic Approach to Environmental Advertisements. *Jwadi Journals, Article Number:268155*.
- Vallverdu-Gordi, M., Marine-Roig, E. (2023). The Role of Graphic Design Semiotics in Environmental Awareness Campaigns. *International Journal of Environmental Research and Public Health*, 20(5), 4299.