

DIACHRONIC ECOLOGICAL DISCOURSE ANALYSIS OF IMDb

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Abstract. *Media is a useful tool to convey various types of messages. Within the past years, broadcasting media has covered a wide range of different communication methods such as television, radio, newspapers, and magazines. The article's central hypothesis is that movies, TV, and video games quotes, as the subcategory of broadcasting, convey messages about environmental issues. It seems that ecological discourse analysis can be useful, as it focuses on texts about the environment. In a diachronic approach, the present article aims to explore the environmental issues in movies, TV, and video games quotes; in this regard, we analyzed ecological discourse and solutions proposed by IMDb quotes. The data was collected from the IMDb database using Keyword in Context (KWIC) over 1990-2020. The findings indicated that KWICs such as global warming (38%) and endangered species (19.18%) had the highest frequencies. On the other hand, only 0.67% of the raw numbers of quotes belonged to environmental issues, which indicated that IMDb quotes implicitly conveyed the message regarding ecological matters. Furthermore, the studied IMDb mostly explained the consequences and provided solutions to environmental issues. Therefore, the frequency of informing people about environmental negligence was much lower than expected.*

Key words: *ecolinguistics, discourse analysis, IMDb, environmental issues*

1. INTRODUCTION

The media has a significant impact in raising public awareness about specific topics. In an analysis conducted by the center of environmental information studies (1999), it was revealed that newspapers (37%) and TV (37%) are among the main media used by society to obtain environmental information but media insufficiently (88%) transmitted environmental issues. Over the last three decades, environmental issues have emerged as one of the most serious issues confronting the globe (İrvan, 2019). These environmental issues, e.g. deforestation, pollution, biodiversity loss, climate change, acidification of the oceans, and

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depletion of the ozone layer, have challenged societies. Subsequently, developing effective technology and warning people about their damaging behaviors are indispensable strategies to deal with these issues (Klößner 2015:4).

Even in its simplest definition, the environment is strongly related to living things (Írvan, 2019:4). When investigating environmental issues and risks, it is instantly clear that there are no times, spaces, or locations outside of 'nature,' just as there are no positions from which the journalist can observe 'objectively.' Everything is involved in unequal positions of power (Allan, Adam & Carter, 2000:13). To many specialists, the language of environmentalism reveals its obsolete nature to defend its ideas when public commentators debate over dissolving actual into virtual (Allan, Adam & Carter, 2000).

The outcome of ecology and linguistics is known as ecolinguistics; Trim (1959) and Haugen (1971) paved the way for many researchers to investigate the function of language in society, notably the link between environment and language. Ecolinguistics, a subfield of linguistics that emerged in the 1990s (Derni, 2008), was later described as "the study of interactions between any given language and its environment" (Haugen, 2001:57).

Stibbe (2014: 125) defines ecolinguistics as the study of human beings' relationship to one another and the physical environment. Later, he considers it a field that explores the role of language in life-sustaining interactions. In this regard, it is the language that links humans to each other and the environment; for this reason, it influences our thinking and inspires us to protect or destroy ecosystems. Couto (2015) mentions ecolinguistics as the study of interactions between language and its social, mental, and natural context (environment). From this standpoint, ecolinguistics is concerned with analyzing texts related to the environment (Wu 2018: 646). Obviously, 'linguistics' of ecolinguistics uses linguistic analysis techniques to reveal the stories-we-live-by and discuss them based on an ecological perspective (Stibbe 2015). According to Zhou and Huang (2017), ecological discourse, as a significant portion of cultural discourse studies and ecolinguistics, explores discourse, ecology, the world, and interaction.

The manner in which the media frames certain preferred discourses about environmental issues, raises serious concerns (Allan, Adam & Carter, 2000:17). Stibbe (2012) mentions the presence of positive discourses in Japanese animated films and states that ecolinguistics can contribute to critical discourse studies and reveal new insights (Stibbe 2014:125). Cottle also argues that television news resonates with feelings about nature and the environment. Therefore, they contribute to the formation of environmental sensibility so that nonprofessional viewpoints find opportunities for public and discursive engagement (Allan, Adam & Carter, 2000:17). In this case, the visibility of environmental issues in the media is undoubtedly important. Media coverage is required to bring an environmental issue to the attention of the public or political agenda (Írvan, 2019:26). As a result, the main objective of the present study is to analyze environmental issues in broadcast media as they may contain environmental messages for their audiences and to compare the results with the TV Corpus of online English corpora (BNC). Therefore, in this paper, ecological discourse analysis is connected to the linguistic analysis used to warn about environmental issues or provide solutions.

The findings of this study should make an essential contribution to environmental issues by demonstrating that, in connection to environmental discourse, ecolinguistics plays a vital role in exposing and interrogating texts and investigating linguistic forms and ideologies. These features contribute to environmental degradation and aid in the quest for new forms of language that encourage people to safeguard the natural world (Stibbe, 2015). In doing so, we shall answer the following questions:

1. Which environmental issues have the highest frequency in IMDb quotes?
2. Do IMDb quotes address their audiences explicitly regarding ecological issues?
3. Is there any change in KWICs' frequencies over the 1990s, 2000s, and 2010s?
4. Do they merely warn about ecological issues or do they provide solutions?
5. How can environmental problems be solved according to IMDb quotes?

2. LITERATURE REVIEW

The concept of the environment as a natural sphere is increasingly challenged by scholars from the humanities and social sciences (Allan et al., 2000). Earlier works on the IMDb movie review database were mainly based on sentiment analysis (Mesnil et al., 2014; Keerthi Kumar et al., 2019; Shaukat et al., 2020), and few studies have investigated the media representations of environmental issues.

Stamm et al. (2000) reported an increasing concern and awareness about global warming during 1981-1990, but they did not investigate other environmental issues. Their findings imply that the media is already raising awareness of global warming in the general population, and the usage of television was directly linked to solutions, including the cutting down of trees. It was also the only media that was directly connected to the perceived benefits of family planning. Therefore, the general population can only understand environmental concerns better if they are communicated effectively.

Luedecke and Boykoff (2017) insist on the essential role of media in environmental interpretations that can affect people's perception of the environment. Regarding environmental concerns, media frames impact significantly how environmental issues are viewed and addressed and how the public views them, from the formulations of a problem to the assessments of prospective, practical, or desired solutions.

Mileless and Larouz (2018), through content analysis, studied seven English language teaching (ELT) textbooks used in Moroccan high schools to examine 14 environmental texts from an ecolinguistic viewpoint but do not classify the environmental issues. According to them, using the passive voice in narratives obscures individuals' responsibilities as committers of destructive actions to the environment.

İrvan (2019) analyzed media representations of environmental issues in a sample of national and local Turkish newspapers based on nine selected keywords. His study focused on Turkish newspapers through qualitative critical discourse analysis within 2017-2019 and failed to propose a quantitative approach.

Xue and Xu (2021) performed an ecological discourse analysis of news coverage of COVID-19 in China. The purpose of this study was to indicate the ecological orientations and attitude of the news coverage towards this public health emergency in China's fight against COVID-19. To this purpose, they selected *The Times* and *New York Times* data sources as two widely considered and high-quality newspapers. Their findings revealed that both news channels are shown to use more negative evaluation resources to communicate their thoughts regarding China's fight against COVID-19, and their news coverage is more eco-destructive.

Ming et al. (2021) mention human activities that are causing environmental issues and disrupting human lives, such as climate change, acid rain, air pollution, ocean pollution, urban sprawl, biodiversity loss, industrial waste, and ozone layer depletion. According to them, we may think that environmental problems are far from our daily lives. Still, media make people recognize that the environmental problem has a close relationship with their performances.

All of the studies reviewed above attempted to summarize the literature involving media representations of environmental issues in a particular way.

3. METHODOLOGY

The current study adopts a content analysis approach to collect the data. We searched 22 English KWICs of environmental issues in IMDb (Internet Movie Database), and a combination of quantitative and qualitative approaches was used in the data analysis. IMDb database is an online English database of information related to films, television programs, home videos, and video games, along with their publication date (Smart, 2016:6).

After indicating each KWIC, we analyzed them based on their content without considering their number of occurrences. Since KWICs, such as preserving trees, plastic pollution, soil pollution, environmental degradation, and resource depletion, despite frequent quotes, did not convey any message regarding environmental issues (Table 1), these types of KWICs were disregarded.

The second column of Table (1) indicates the IMDb quotes' raw results (n=40368). The third column shows the quotes which contain the KWIC related to the environmental issues (n=271), such as plastic pollution, soil pollution, environmental degradation, resource depletion. Note that the total number of related quotes to the ecological issues was only 0.67 percent indicating that IMDb quotes may implicitly mention environmental issues.

Table 1 Environmental issues along with the frequency of their occurrence

KWICs	No. Quotes	No. Related Quotes	Percentage
Air Pollution	4,310	8	2.95
Noise Pollution	1,491	9	3.32
Water Pollution	5,923	1	0.36
Plastic Pollution	1,023	0	0
Soil Pollution	686	0	0
Nuclear Pollution	991	1	0.36
Medical Waste	5244	8	2.95
Industrial Waste	4350	3	1.10
Genetic Modification	621	2	0.73
Endangered Species	1126	52	19.18
Environmental Protection	5,289	5	1.84
Environmental Degradation	340	0	0
Resource Depletion	625	0	0
Overfishing	2	2	0.73
Global Warming	2,384	103	38
Preserve Trees	3,821	0	0
Acid Rain	2,369	14	5.16
Deforestation	9	9	3.32
Overpopulation	25	12	4.42
Ozone Layer	298	26	9.59
Greenhouse Gas	71	7	2.58
Carbon Footprint	393	9	3.32
Total	40368	271	0.67

According to the first column, KWIC such as water pollution, medical waste, and environmental protection had the highest frequencies of raw results (above 5000) but based on the Diagram (1) regarding the number of related KWICs such as global warming (38%) and endangered species (19.18%) had the highest frequencies.

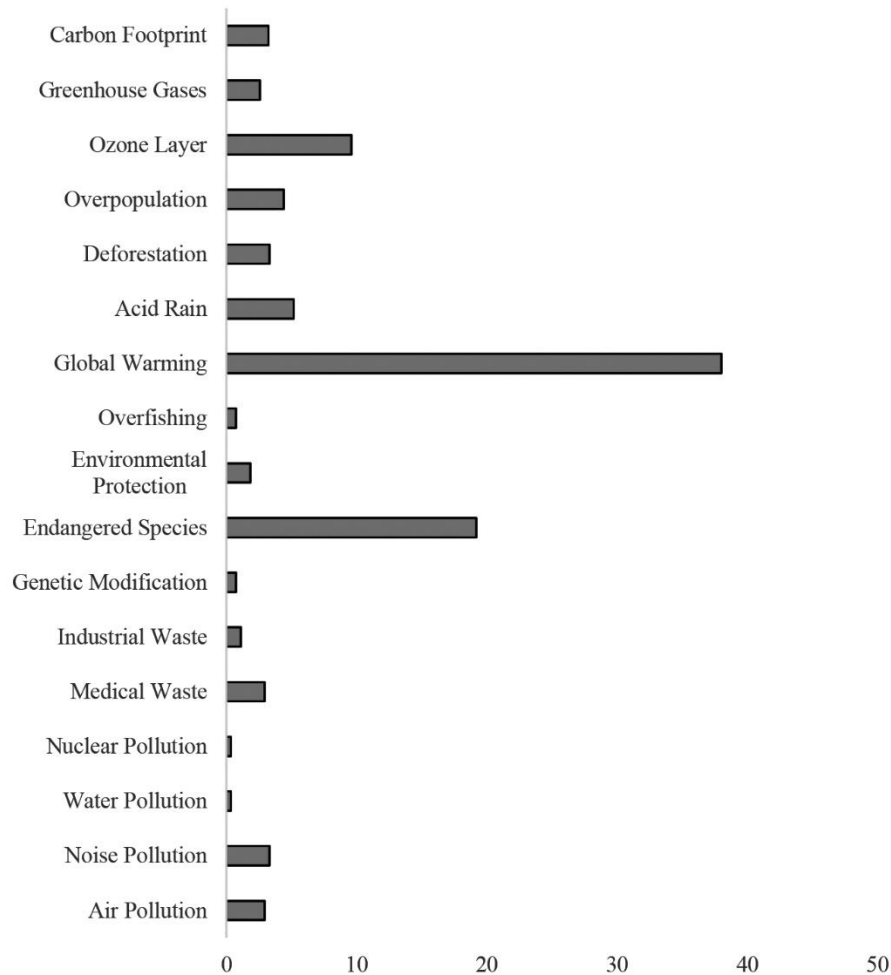


Diagram 1 percentages of KWICs related to environmental issues

We searched all 22 KWICs of environmental issues in the TV Corpus of online English corpora at the second stage. Therefore, in this study, two corpora were used. The first one was the IMDb database and the second one only included the TV episodes from the 1950s to the present. According to what is mentioned in the online English corpora, all 75,000 episodes are tied to their IMDB entry. Therefore, it was easy to compare the present study's findings with what was available in this online corpus.

While searching the 22 KWICs, we recognized a consistency between the frequency of KWICs in this research and obtained the frequency from TV Corpus. The incidence of the KWICs such as plastic pollution, soil pollution, environmental degradation, resource depletion, and preserving trees in these corpora was zero, and there was no quote for these KWICs. After the data analysis section, we will review some examples of each KWIC and its content and publication year.

3. DATA ANALYSIS

This section will review the IMDb quotes related to environmental issues and analyze their content.

▪ Air Pollution

Under this category, we selected quotes which contained the "air pollution" keyword as a whole. According to Table (1), only eight cases of media quotes were observed. The following quote provides a solution for air pollution, which humans can do:

1. *you can fight oil spills and air pollution by encouraging your family not to waste gasoline and other fuels* (A Hero for Earth, 1990).

The quotes (2- 4) indicate the consequences of air pollution.

2. *Air pollution counts up to almost SEVEN, George! People are out there on the streets dying of Carbon Monoxide poisoning, and they don't even know it* (Creepshow, 1982).
3. *When the air pollution mixes with the clouds and then rains, it can destroy forests* (Rain of Terror, 1990).
4. *Worldwide, three million people die a year from air pollution from fossil-fueled plants* (Pandora's Promise, 2013).

Of course, many quotes conveyed the message implicitly and through breaking the keyword "air pollution". Still, the present study focused only on the explicit usage of "air pollution" or any other environmental issue. While searching, we encountered some of these quotes, the following are two examples of such quotes.

5. *No cars, No pollution* (Journey's End, 1999).

As shown in this quote, only the use of negative determiner and "cars" conveys its message regarding a solution for air pollution.

6. *Pollution! The birds can't breathe* (The Nice Guys, 2016).

In addition, quote (6) belongs to recent years; the same strategy has been used to indicate the issue and emphasize "pollution":

▪ Noise Pollution

Based on Table (1), only nine quotes contained the "noise pollution" keyword in this category. Following are the examples:

7. *I hate noise pollution* (Tough Guys, 1986).
8. *That Dog's barking is Noise Pollution* (Neighbors, 1988).

In quote (7), as the originator of this type of pollution, human being expresses impression about it. The second quote even tries to blame animals for this type of pollution. The following quotes (9-10) are about the nature of noise pollution and they explain the nature of noise pollution:

9. *That's what I call noise-pollution* (Captain Planet and the Planeteers, 1991).
10. *That's not rock and roll; it's noise pollution* (Neighbors, 2008).

▪ **Water Pollution**

In this category, only one quote was found explaining the nature of water pollution:

11. *No, it's not! It's called water pollution* (Sesame Songs, 1993 Video)

While searching, we encountered some quotes that did not contain this keyword but conveyed the meaning through their content. Following are two examples of such quotes.

12. *you people have **polluted** our lakes and **waters** by throwing stuff in them!*

Quote (13) should be an interesting quote that belongs to the 90's decade as it emphasizes that due to the scarcity of water, some people may fight over the water or may want to monopolize water. On the other hand, nowadays, due to the lack of water sources worldwide, we know that water wars or conflicts will occur in the future. This quote indicates the process of water pollution.

13. *I never thought I would see people fighting over water* (Armour of God, 1991).

14. *Lindsay Elding, she wanted to privatize water. It's a resource that belongs to everyone* (Law & Order; Episode: Wet, 2010).

The quote (15) indicates the ideal approach toward finding water on another planet due to water scarcity on earth.

15. *They found water on Mars* (Phoenix, 2009).

In this regard, some quotes conveyed meaning about the source of water quotes (16-17).

16. *Well, it is water from the sky. It is wet* (The New World, 2019).

17. *The water has been here a million years; how can we be late?* (Amazing Grace 2006).

Some quotes (18-20) conveyed the meanings about the value of water; for instance, in quote (18) water can alive the dead person, even in (19) diamonds are less valuable than water, or in the quote (24) the life of human being is depended on the water.

18. *The Romans believed this water would restore the dead to life* (Amazing Grace 2006).

19. *The diamonds are in here. Take them - and give me water* (Desert Nights, 1929).

20. *Don't die; I'll get you water. Stay there. Don't move, I'll get you water* (The Good, the Bad and the Ugly, 1966).

Some others only explain the nature of water (quote 21).

21. *How is water? It's an eternal mystery. Every time I look at it, it just completely amazes me. It behaves unlike any other material that we've got on the planet* (Creature Comforts 2003).

▪ **Medical Waste**

Medical waste quote (22) explains the necessity for having trained forces to deal with such waste, and quote (23) gives information regarding its nature:

22. *for a company that specializes in disposing of medical waste* (NCIS: New Orleans, 2014).

23. *Once the spermatic cord is severed, the testicles are just medical waste* (Contrapasso, 2017).

24. *He had all these bags everywhere, he said they were a medical waste, we opened up some of them, there were little bodies inside* (Gosnell: The Trial of America's Biggest Serial Killer, 2018).

▪ **Industrial Waste**

Regarding the side effect of industrial waste, quote (25) explains how toxic industrial waste can change human beings' DNA, and quote (26) emphasizes the damage of this type of waste over the natural habitat:

25. *This stuff can turn a person's DNA inside out. It's a toxic industrial waste* (Batman Beyond, 1999–2001).

26. *You can't even dump industrial waste anymore because it might harm the natural habitat. I'm supposed to start worrying about animals now* (The Dogs of War, 1999).

- **Genetic Modification**

The nature of genetic modification quote (27) can be considered, as it explains how this modification is working:

27. *95% of all the genetic modifications are done to allow the plants to survive ... and to allow the animals to survive more drugs being put into them* (Seeds of Death: Unveiling the Lies of GMOs, 2012).

- **Endangered Species**

Quote (28) explains the terms and conditions of endangered species law:

28. *and under the endangered species law, I cannot be shot or harmed in any way or all of you will go to jail* (You Can't Do That on Television, 1979–1990).

Furthermore, quote (29) indicates which type of animals are endangered species:

29. *Ere, did you know that the East African gazelle became an endangered species for this model?* (Go West Young Man, 1981).

Quote (30) explains the nature of endangered species and the punishment for transporting these types of animals:

30. *I'm illegally transporting endangered species! Please, sir, I'd like to be let out* (The Freshman, 1990).

- **Environmental Protection**

Quote (31) explains the terms and conditions of violating environmental protection:

31. *I want this man arrested! Captain, these men are in criminal violation of the environmental protection Act! And this explosion is a direct result of it* (Ghostbusters, 1984).

- **Global Warming**

This category had the highest frequency among IMDb quotes related to environmental issues. Quote (32) provides some definitions of the nature of global warming:

32. *I think it's like saying, well is global warming worse than ocean acidification or is fishing all the big fish in the sea worse than polluting it?* (Racing Extinction 2015).

On the other hand, quotes (33-36) aim to provoke the audience to do something to resolve global warming:

33. *The world will end in two-thousand fifty because of global warming or whatever* (How to Boil a Frog, 2009).

34. *After law school, I'm going to work for the NRDC. They're going to stop global warming* (Life Among the Gorillas, 2006).

Regarding the negligence of global warming, quotes (39-40) are good examples:

35. *I never thought global warming could happen so fast. I guess I didn't listen* (Two Days before the Day After Tomorrow, 2005).

36. *Global warming is a myth!* (The Simpsons Movie, 2007).

Quotes (37-38) indicate the causes and quotes (39-40) consequences of global warming, such as climate change or health problems:

37. *I sponsor a penguin. They're losing their home to global warming, my car gives seven miles to the gallon, and I felt bad* (The Comic-Con Conundrum, 2017).

38. *Global warming is causing the planet to rotate more quickly* (The Queen of Hearts, 2015).

39. *This is what is going to kill us all! Global warming will murder each and every man, woman, and child! If it's not the trees fighting back, or the sun, it's the water!* (Global Exaggeration, 2008).

40. *Global warming changed the weather. The rainfall moved away from us* (Two Futures, 1991).

Quote (41) emphasizes the role of human beings in Global warming, yet quote (42) indicates that human beings can reverse the process of global warming. However, this quote belongs to 1991, but, humans are still dealing with global warming:

41. *How about we cause more global warming? So that in the future the polar ice caps melt, and it ushers in a new ice age* (Goobacks, 2004)

42. *Honey, you know that global warming problem? Well, I've discovered how we can reverse it* (Hot Shots, 1991).

Some other quotes present human beings as the leading cause of global warming; in some cases, they have considered global warming as the fever and humans as the virus, who are making our planet sick (Kingsman: The Secret Service 2014). Some quotes directly blame the human being for global warming, war, and pollution (Highlander: The Search for Vengeance 2007 Video).

- **Acid Rain**

Regarding the cause of acid rain, quote (43) introduces factories as the main reason:

43. *It's acid rain, Cap. Those factories burning coal and polluting the air are a real menace* (Rain of Terror, 1990)

Furthermore, quote (44) explains how we neglect our future generations:

44. *I really don't understand adults. They don't seem to worry about leaving us with filthy air, dirty water, acid rain, and half a million nuclear warheads, but they get REAL uptight about whether video games are good for us* (Rules and Regulations, 1983).

According to some other quotes, land barren and the water toxic are among acid rain consequences (Turbo Kid, 2015). Others state that acid rain can destroy all our crops and pollute our water (Get Smart, Again 1989 TV Movie). In addition, *if acid rain pollutes our lakes, it will consequently kill us* (Blood Hook, 1986).

- **Deforestation**

The following quote (45) explains deforestation's consequences and side effects:

45. *Deforestation is not funny. It's screwing up the whole environment.* (An Axe to Grind, 1999)

- **Overpopulation**

Quote (46) explains overpopulation's consequences and side effects, such as hunger:

46. *In 24 hours, there will be one shrew left on the island, and he will be dead of starvation. An excellent example of overpopulation.* (The Killer Shrews, 1959)

- **Ozone Layer**

This one also explains the consequences of the damage to the ozone layer. To avoid solar radiation, we need to repair this layer:

47. *Unless we restore the ozone layer, solar radiation will continue to increase to the danger level* (The Pyramid, 1978).

Quote (48) warns us about the disappearance of the ozone layer:

48. *Be worried about the world! Be worried about the environment and the homeless people, and... the animals, and the rainforest, and the ozone layer* (Obsession, 2001).

- **Greenhouse Gas**

Regarding greenhouse gasses, quotes introduce the factors such as tearing down forests and slaughtering native animals (Dominion 2018). Some other quotes consider commercial buildings as the producers of greenhouse gases (Racing Extinction 2015). On the other hand, it has been stated that clearing the land for grazing, feeding, transporting, and livestock causes more greenhouse gases than all the direct emissions (Racing Extinction 2015). The quote (49) portrays the consequence of greenhouse gas:

49. *If we make things worse with greenhouse gases, the polar ice could melt, and flood every coastal city* (Greenhouse Planet, 1992).

- **Carbon Footprint**

The following quote (50) provides a solution, and quote (51) indicates a willingness to produce a low carbon footprint:

50. *This is where the waste comes out, and if you're going to get zero carbon footprint, this is where the rubber meets the road* (Dances with Groceries, 2009).

51. *I like to maintain a low carbon footprint* (General Hospital, 2015).

Table (2) specifies a diachronic comparison of KWICs in IMDb quotes and TV Corpus of online English corpora. After comparing the IMDb database with the TV Corpus of online English corpora, the KWICs with zero frequency were eliminated. The rest of the KWICs were compared within the categories of the present study, the 1990s, 2000s, and 2010s.

Table 2 Diachronic comparison of KWICs from

KWICs	1990s	2000s	2010s	present study
Air Pollution	0.25	0.18	0.1	0.022
Noise Pollution	0.13	0.08	0.13	0.024
Water Pollution	0.03	0.06	0.02	0.002
Nuclear Pollution	0	0	0	0.002
Medical Waste	0.16	0.43	0.33	0.022
Industrial Waste	0.19	0.09	0.08	0.008
Genetic Modification	0	0.11	0.05	0.005
Endangered Species	1.17	1.06	0.66	0.14
Environmental Protection	0.13	0.21	0.1	0.01
Environmental Degradation	0.03	0.01	0.02	0
Overfishing	0	0.02	0.06	0.005
Global Warming	1.14	5.2	2.1	0.28
Acid Rain	0.79	0.34	0.2	0.03
Deforestation	0.1	0.1	0.17	0.024
Overpopulation	0.16	0.15	0.2	0.03
Ozone Layer	1.59	0.64	0.27	0.07
Greenhouse Gases	0.06	0.35	0.2	0.01
Carbon Footprint	0	0.38	0.42	0.024

According to Table (2), there was one quote about the KWIC of nuclear pollution, and no quote was observed in the TV Corpus of online English corpora. This quote belongs to the year 1991, and aims to explain the side effect of nuclear pollution. The presence of quote (52) and its absence in the TV Corpus of online English corpora can be explained by the fact that this corpora only includes general TV programs and not Japanese kaiju movies such as *Godzilla vs. King Ghidorah* (1991).

52. what about nuclear pollution that destroys Japan (Godzilla vs. King Ghidorah, 1991).

In two other quotes (53-54), no trace of warning about nuclear contamination was available, and they mainly focused on the positive effect of nuclear energy (quote 57) or the nature of this energy (quote 58). On the other hand, they did not include the nuclear pollution collocation, so we did not consider these two quotes in Table (1):

53. "When we look at nuclear, we have to understand that we're making a long-term investment" (Pandora's Promise, 2013).

54. "A nuclear reactor makes energy with steam. The steam turns a turbine which generates electricity" (Chernobyl, 2019).

According to Table (2), there was no IMDb quote about the KWIC of environmental degradation, but there were some in the TV Corpus of online English corpora:

55. "I was almost roadkill, flattened by the big speeding rig of environmental degradation" (Northen Exposure, 1993).

56. "But tourism means development along the coast, and up to now, coastal development anywhere around the world usually means environmental degradation" (Planet Earth: The Future, 2006).

57. "I mean, once, I hit a pigeon. I felt horrible for weeks. No sign of environmental degradation" (Fringe, 2010).

58. "But every one of them has a criminal history of environmental degradation" (Grimm, 2017).

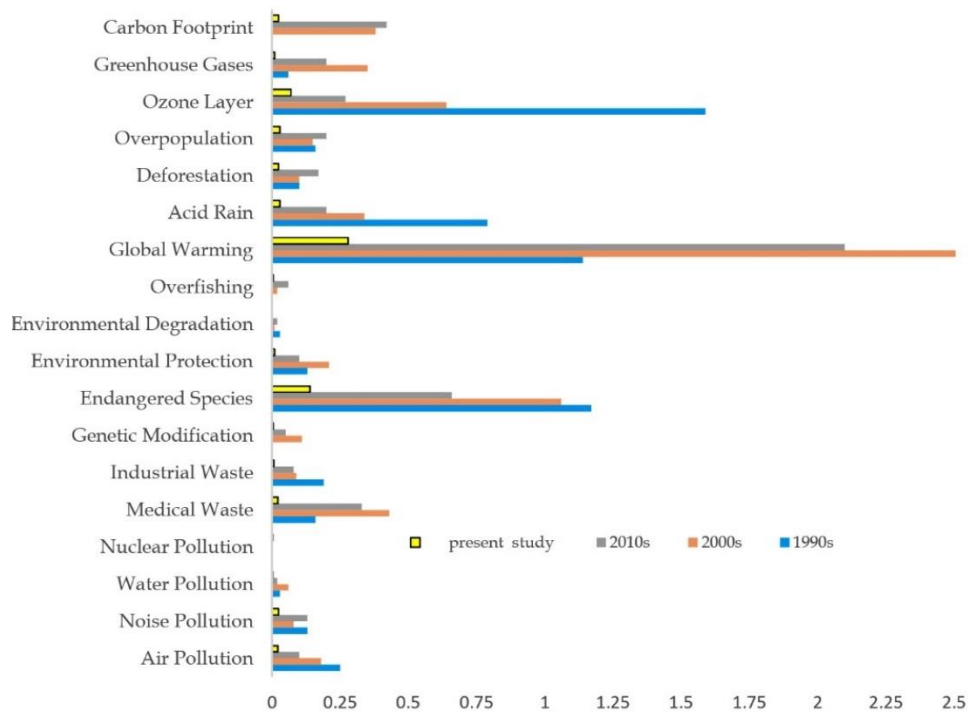


Diagram 2 diachronic frequencies of KWICs

The main reason for the lack of IMDb quote about environmental degradation is that the present study focused only on the quotes, but on titles or plots. On the other hand, TV Corpus of online English corpora included quotes, subtitles, and other data, which is why cases 55-58 were observed.

The content of the media quotes were analyzed and classified into five categories of solution, consequences, definition, cause, and negligence to establish whether broadcast media merely warn about ecological issues or provide solutions. Table (3) shows examples of each category, their frequencies, and percentages:

Table 3 Frequency of studied content meanings along with examples

Content Meaning	Frequency	Percentage	Example
Consequences	28	29.78	This stuff can turn a person's DNA inside out. It's toxic industrial waste. (Batman Beyond, 1999–2001)
Solution	27	28.72	Telling stories to the people about worldwide issues like global warming. (The Last Performance, 2010)
Definition	17	18.08	That Dog's barking is Noise Pollution! (Neighbors, 1988)
Cause	16	17.02	I always thought the end would be caused by us. Nuclear war, global warming (Ejecta, 2015)
Negligence	6	6.36	Global warming is a myth! (The Simpsons Movie, 2007)
Total	94		

The Table and Diagram (3) illustrates the content; what stands out is that only a small percentage (6.36%) has been dedicated to negligence and then cause (17.02%). These results suggest that media broadcast is not willing to indicate the cause of the environmental issues or lack of knowledge or ignorance of the society. Still, it commonly tries to highlight the consequences (29.78%) and provide solutions (28.72%).

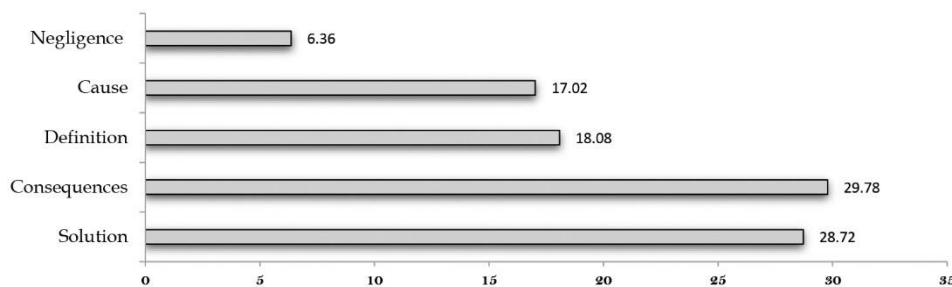


Diagram 3 environmental discourse categories with the frequency

As mentioned in the literature review above, most environmental problems occur due to human activities (Klößner, 2015; Ming et al., 2021) and due to our taking the natural environment for granted. Therefore, before providing any solution, we need to make people aware of the consequences of their actions and their side effects on the environment. This awareness can be done by arousing emotions. Adams (1990) stated that as long as we accept that environmental issues can only be solved by altering people's attitudes and behavior, we must recognize the importance of subjects dealing with emotions. In subsequent media quotes, media tries to sympathize with human beings in two ways: 1. by offering solutions

for environmental issues and 2. by justifying why some problems cannot be solved. The following examples provide the solution:

59. "To raise public awareness of the dangers of **global warming** and calls for immediate action to curb its destructive effects on the environment" (An Inconvenient Truth 2006).

60. "Native Masai tree planting project fights **global warming** and water shortages in Africa" (ACT--A Convenient Truth 2009 Video).

As mentioned, media sometimes indicate why we cannot solve environmental issues; the following example suggests that we harm our nature daily and in non-stop form:

61. "Of course, because the **greenhouse gasses** are still building up, it takes more and more ice each time, thus solving the problem once and for all" (Crimes of the Hot 2002).

5. DISCUSSION AND CONCLUSION

The present article focused on environmental issues through IMDb quotes. Returning to the questions posed at the beginning of this study, Table (1) indicates that out of 40368 quotes, a total of 271 quotes were related to environmental issues. Despite frequent quotes, some KWICs like plastic pollution, soil pollution, environmental degradation, resource depletion, and preserving trees did not have any related quotes, as they did not convey the message regarding environmental issues. Based on the first column of Table (1), KWICs such as water pollution, medical waste, and environmental protection had the highest frequencies (above 5000 of raw results). However, based on Diagram (1) regarding the number of related IMDb quotes, KWICs such as global warming (38%) and endangered species (19.18%) had the highest frequencies.

Regarding the second question, we hypothesized that broadcast media communicate with their audiences about environmental issues directly and explicitly. However, this hypothesis was rejected according to Table (1) and the data analysis section. Since media, the total number of related quotes to the environmental issues was only 0.67 percent of the raw number of quotes, and some quotes regarding air pollution (5) water pollution (12) were the ones which communicated with their audiences about environmental issues implicitly and without using KIWCs. A further study focusing on not using KIWCs and implicitly conveying ecological issues is essential for future research.

According to Diagram (2), to answer the third question at the first level, KWICs such as endangered species, global warming, and ozone layer had the highest frequencies over the previous decades and in this study. At the second level, KWICs such as medical waste, air pollution, noise pollution, acid rain, deforestation, overpopulation, industrial waste, greenhouse gases, environmental protection, and water pollution also had high frequencies over the decades and in this study. However, it is apparent from Diagram (2) and Table (2) that over the 1990s, there were no KWICs regarding genetic modification, overfishing, and carbon footprint, which indicates that still in that decade, such issues were not known as severe issues, and since 2000s, and 2010s these KWICs started to appear. Despite their limitation in the case of the selected number of KWICs, our results agree with those obtained by Stamm et al. (2000) as they have expressed an increasing concern and awareness on global warming, mainly by television over 1980-90. In our study, the

diachronic frequency of global warming in IMDb quotes (Diagram 2) may explain the relatively good concern regarding global warming during recent decades.

The most interesting aspect is that the studied media quotes mostly explain the consequences and provide solutions (Table 3). Nevertheless, the frequency of negligence was lower than in other environmental discourse categories. These results are somehow in agreement with those obtained by Mliless and Larouz (2018), as they have mentioned that passive voice in narratives obscures individuals' responsibilities as committers of destructive actions to the environment. In the case of our data, media broadcast does not indicate the cause or negligence of committers but highlights the consequences in the first step and then the solution in the second step.

To answer the fourth and fifth questions based on the content of the media quotes, it is now possible to state that media broadcast is not seeking to reveal the origin of the environmental concerns, lack of understanding or ignorance of the society, but at the first step, it warns about the consequences (29.78%) and then proposes solutions (28.72%). What emerges from the quotes reported in this paper is that media broadcast suggests solutions such as car pooling (Idol 2009), telling stories (Last Performance 2010), researching on global warming, making films about global warming (Antarctica: Ice & Sky 2015), and regulating government policies (Global Warming 2017).

The results of this research support the idea that media influences the way in which the environment is perceived. It indicates the public's opinion on environmental issues and the potential or possible causes, consequences, and even solutions. In this case, not only a solitary action but acting parties are required to cope with global environmental issues.

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DIJAHRONA ANALIZA EKOLOŠKOG DISKURSA U IMDb

Mediji su korisno sredstvo za prenošenje različitih poruka. Tokom proteklih godina, elektronski mediji su obuhvatili širok spektar različitih metoda komunikacije kao što su televizija, radio, novine i časopisi. Centralna hipoteza članka je da filmovi, TV i video igrice, kao mediji emitovanja poruka, prenose poruku o pitanjima životne sredine. Čini se da analiza ekološkog diskursa može biti korisna, jer se fokusira na tekstove o životnoj sredini. U dijahronom pristupu, ovaj članak ima za cilj da istraži pitanja životne sredine u filmovima, TV emisijama i video igricama; s tim u vezi, analizirali smo ekološki diskurs i rešenja koja predlažu IMDb citati. Podaci su prikupljeni iz IMDb baze podataka pomoću softvera KWIC tokom 1990–2020. Podaci su pokazali da KWIC kao što su globalno zagrevanje (38%) i ugrožene vrste (19,18%) imaju najveću učestalost. S druge strane, samo 0,67% broja citata pripada pitanjima životne sredine, što ukazuje da IMDb citati implicitno prenose poruku u vezi sa životnom sredinom. Štaviše, proučavani uzorak je uglavnom objašnjavao posledice i rešenja za pitanja zaštite životne sredine. Zbog toga je učestalost obaveštavanja ljudi o nemaru pri očuvanju sredine bila mnogo manja od očekivane.

Ključne reči: *ekolinguistika, analiza diskursa, IMDb, zaštita životne sredine*