# LINGUISTIC REPRESENTATION OF NATURAL DISASTERS IN MEDIA COVERAGE

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Nowadays natural disasters affect the lives of thousands of people living all over the world. However, the complexity of the processes that deal with the problems of news coverage and recovery has received the relatively narrow focus of the scientists. Thus, the presented article aims to analyse the discourse of natural disasters, to highlight the main content categories and their subtopics and to reveal the stylistic peculiarities of the news articles of the given topic.

To achieve the main goal of the research the authors selected the collection of texts that were obtained from various news sites. To reveal the overall discourse structure we applied a content analysis that helped to identify various thematic patterns and subtopics and after that to calculate the frequency of each theme.

Methods of corpus linguistics and critical stylistics allowed the authors to select the frequent words and word combinations constituting each thematic pattern and analyse the significant lexical peculiarities of the examined discourse.

In conclusion, the authors present the main findings of their work and discuss the possibilities of further research in the area of discourse analysis of natural disaster media coverage.

*Keywords: discourse analysis, media coverage, natural disaster, content analysis, critical stylistics, discourse structure, frequency.*

Practically everyday TV, radio and newspapers report on natural disasters striking different parts of the world and affecting the lives of people in different countries. Challenges that people have as a result have a significant impact on individuals and society by cutting across political, economic, social and psychological domains [3].

The social core of natural disasters has become a fundamental benchmark of disaster studies, with disasters seen to result from the interaction between hazards and social vulnerability. While earthquakes, tsunamis, and floods can be conceptualized as natural hazards, such hazards are necessary, but not sufficient, for a disaster to take place, and only become disasters through their encounter with human vulnerability [8].

The discourse that deals with the natural disaster description aims to raise awareness of the deteriorating situation of nature. This type of discourse is used to evoke certain values, beliefs, attitudes and behaviours toward nature that contribute to alert, persuade and help solve environmental problems, placing them as a matter of relevance for the public and to negotiate with society on the response to implement [1].

Despite the complexity of the whole situations that are caused by various natural disasters, the discourse revealing the linguistic representation of the catastrophe has a narrow focus of interest. Thus, our research aims to analyse the linguistic representation of natural disaster media coverage by highlighting the main content categories and their subtopics as well as working on stylistic peculiarities of the studied discourse.

For that purpose, we decided to apply to various methods that helped us to organize the overall research on the chosen topic. Among the most prominent methods, we can mention definitional analysis, content analysis of the selected material, corpus linguistics and its methods of frequency as well as critical stylistics analysis.

In the first step of our investigation, we decided to concentrate attention on the term "natural disaster". For that purpose, we collected the defections offered by various dictionaries and constructed the semantic fields that comprise the core of the lexical meaning of the given word combination.

• Oxford Learners dictionary [9]: *a sudden and violent event in nature (such as an earthquake, hurricane, or flood) that kills a lot of people or causes a lot of damage.*

• Macmillan English dictionary [7]: *something that happens in nature and causes a lot of damage or kills a lot of people, for example, a flood or an earthquake.*

• The dictionary by Merriam Webster [4]: *a sudden and terrible event in nature (such as a hurricane, tornado, or flood) that usually results in serious damage and many deaths.*

• The definition of the term offered by United Nations International Strategy for Disaster Reduction [11]: *a disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability, and capacity, leading to one or more of the following: human, material, economic and environmental losses, and impacts. Its main characteristics are emergency, disaster damage, disaster impact.*

The main characteristics of the term "natural disaster" deal with the semantic groups of an unex-

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pected, terrible event and disaster impact. Therefore, we can say that while organizing the discourse analysis of any natural disaster the mentioned groups have to be revealed by various linguistic means that the scientists can trace. Moreover, the definition provided by United Nations International Strategy for Disaster Reduction highlights that hazards can turn into a disaster because of human acts of omission and commission rather than an act of nature and that disasters are caused more by socioeconomic than natural factors [2].

In the second step, we refer to the collection of texts devoted to flooded Venice 2019. The total number of the analysed texts is 50. To examine the broad construction of the discourse we organized the content analysis the main aim of which was to identify thematic patterns and subtopics through which these patterns are revealed. As a result, we got the following picture (Fig. 1).
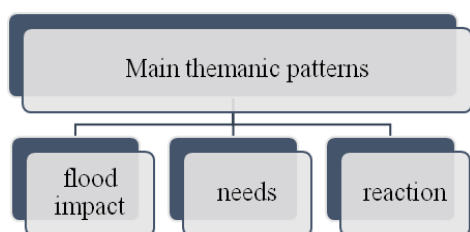


**Fig. 1. Main thematic patterns in the discourse devoted to flooded Venice 2019**

As we can see, the definitional analysis of the term "natural disaster" highlights only one significant category of those presented in the natural disaster discourse – disaster impact, while two other patterns remain hidden in the lexicographic discourse. Anyway, it was also interesting to trace the subtopics of these big thematic patterns through which they are actualized. The subtopics are presented by the given list:

• material and economic loses;
• environmental concerns;
• protection concerns;
• emotional aspects;
• informational-historical aspects.

The distribution of the subtopics within the hematic patterns are illustrated in Table 1.

As we can see from Table 1, the subtopic "material and economic loses" prevails in the thematic patterns "flood impact" and "needs". However, in the second case, its percentage is close to the "environmental" and "protection" concerns the percentage of

which is also higher than 20. The third thematic pattern of "reaction" illustrates the domination of "protection" and "environmental" concerns, while the percentage of subtopic "material and economic loses" drops to 18 % in this group. "Emotional" and "informational-historical" aspects are also reflected in the main thematic patterns; however, they are not so representative. At the same time, it should be mentioned that in case of the "reaction" thematic pattern the subtopic of "emotional aspects" occupies the second position after the leading "protection" and "environmental" concerns.

In our research, we also decided to apply to the methods of Critical Stylistics that can bridge the gap between discourse analysis and stylistics and further develop the critical linguistic approach to the text [6]. The tools of Critical Stylistics [5] and their textual-conceptual categories are presented in Table 2.

The conceptual category of naming and describing can be presented by the noun phrases where the head nouns serve as the keywords in the studied discourse. Utilizing corpus linguistic methods, we selected five most frequent nouns that are *Venice, city, water, flooding, and climate (change)* and analysed the pre- and post modifies to indicate a referent word:

• *Venice, struggling with high tides / sinking Venice / Venice struggling with unsustainable overtourism / crowded Venice / the Iconic Italian city of Venice;*

• *Historic city / lagoon city / whole city / Italian city / fragile city / flooded city / romantic city / unique city;*

• *Record-breaking Venice flooding / worst flooding / disastrous flooding / additional flooding / highest flooding / extreme flooding;*

• *High water / highest water / evening water / night water / salty water / knee-high water / murky lagoon water / sewage tainted water / canal water;*

• *Changing climate / blamed climate changes.*

The detailed analyses allowed us to select the most frequent modifies that are used in the news: *flooded* (27 occurrences), *rising* (24 occurrences), *Italian* (23 occurrences), *historic* (22 occurrences), *sinking* (19 occurrences). Using the stated analytical tool, the authors of the news managed to create the overall atmosphere of the situation and vividly illustrate the tragedy that happened to the city that is believed to be the popular tourist place.

The choice of verbs also strengthens the disastrous position of the city as well as the governmental concern about Venice's future and recovery process.

**Table 1**

**Distribution of the subtopics within the thematic patterns**

| Main thematic patterns | Flood impact, % | Needs, % | Reaction, % |
|---|---|---|---|
| Material and economic loses | 43 | 29 | 18 |
| Environmental concern | 17 | 23 | 27 |
| Protection concerns | 19 | 26 | 34 |
| Emotional aspects | 12 | 15 | 19 |
| Informational-historical aspects | 9 | 7 | 2 |

The tools of Critical Stylistics and their textual-conceptual categories

| Conceptual category/ Textual function | Analytical tool / Formal realization |
|---|---|
| Naming and describing | The choice of a noun to indicate a referent; nominalization; the construction of noun phrases with modifiers (in pre- and post-positions) to further determine the nature of the referent |
| Representing Actions / Evens / states | The choice of a verb, transitivity. |
| Equating and Contrasting | Antonymy, equivalence (parallel constructions), oppositions |
| Exemplifying and Enumerating | Three-part lists and four-part lists to indicate hyponimous and meronymous sense relation, apposition |
| Prioritising | Relates to the sentence structure: exploiting the information structure (clefting), the transformational possibilities (active/passive voice), subordination possibilities |
| Implying and Assuming | Relates to pragmatics: existential and logical presupposition, implicature according to the cooperative model of interaction by Grice (maxims of quality, quantity, relation, manner) |
| Negating | The creation of unrealized worlds |
| Hypothesising | Modality |
| Presenting others speech and thoughts | Speech and thoughts presentation |
| Representing time, space and society | Deixis, choice of verb tense, metaphor |

Among the most frequent meaningful verbs that are used in their various forms, we can mention *to damage, to protect* and *to cost.* The mentioned verbs highlight the aspects that demand particular attention: reconstruction, the necessity for the protection means and solutions in the sphere of inappropriate ways of money distribution (corruption):

• *whose businesses and houses have been damaged / contemporary works may also be damaged / most precious sites have been damaged / collections are safe and have not been damaged;*

• *a food berries designed to protect Venice / in the hope to protect their valuable collections / building a complex flood defence system to protect the city;*

• *it is unclear how much repairs will cost / problems with MOSE, a project that has cost 6 billion euros / the first repairs to these churches could cost 3.6 million euros/ the project has also been plagued by corruption ... and finally it cost 6 billion.*

Besides the mentioned aspects, it is also relevant to consider the questions of verb voice and tense. Although, in Table 2 voice is included in the separate category prioritizing while tense deals with representing time, in the context of this article we see tight connections between action representation, voice and tense as they demonstrate various areas of verb usage.

Above we spoke about the most frequent meaningful verbs that are the verbs that never fulfil the functions of the auxiliary verbs. In the next stage of the research, we turn to the key verbs that can stand separately within the text or can be the identifiers of voice or particular tense. The frequency of these words can be presented by the following list: *is, was, are, has, have, were.* The peculiarities of voice and tenses can be demonstrated through Table 3 that reveals the frequent verb forms and their usage in the discourse.

The Table 3 illustrates the domination of Present Tense Active to describe the current situation in Venice, while in case of the destruction descriptions Past Passive was more preferable. The usage of passive constructions creates the effect of depersonalization and obfuscation of responsibility, although within the news we can see the accusation of the government's delay and corruption in the construction of protection systems and barriers:

*Barriers should be completed now but work is slow....*

*The Italian government is building a complex flood defence system to protect Venice from flooding. But the multibillion project has been under construction since 2003 and has been delayed a number of times.*

*...the destruction this week isn't from Mother Nature but from human failures.*

The inaction of the government to confront the natural disasters in the future is highlighted not only on the grammatical level but also on the lexical and syntactical ones through equating and contracting. Equating and contracting deals with the construction of relationships between entities and in particular oppositional meaning. In the collected news, the main opposition is illustrated on the example of *the government with their ambitious plan to save the city since 2003* and their *readiness to allocate funds* on the one hand and *the charges of corruption* as well as *the limited government resources to repair crumbling historic buildings or to improve inadequate infrastructure* on the other. Through these oppositional images, the audience can see the hidden problems of the society and the city itself. Negation also triggers oppositional meaning and raises unrealized possibilities.

*The gates were supposed to be completed in 2011, but some officials say they won't be ready for another three years.*

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**Table 3**

**Peculiarities of voice and tense usage**

| Frequent verbs | Occurrence | Examples | Percentage Active / Passive |
|---|---|---|---|
| is | 163 | *The iconic Italian city of Venice is under siege from floodwaters / another high tide is in the coming days / Italy's Prime Minister is promising to accelerate the building / the Italian government is building complex flood defence / the geoengineering project is based at decades-old technology / fundamental social change is needed / the flooding risk is made worse / more bad weather is expected for the coming days* | 83 / 17 |
| was | 103 | *The flooding was the result of climate change / sinking was no longer a problem / the fear was more flooding could again threaten a structure / three-quarters of the historic city was submerged following high tides / the mayor of Venice was arrested on corruption / the dramatic situation was brought on by climate change* | 44 / 56 |
| has | 79 | *The city has always experienced periodic flooding / Venice has thrived science the fifth century / the disaster that has stuck Venice is a blow / the city has been sinking almost since it was built / St. Mark's Basilica that has been flooded for the sixth time / the project called MOSE has been underway since 2003 / multi-billion project has been under construction since 2003 and has been delayed several times* | 75 / 25 |
| have | 63 | *The floodwaters have caused hundreds of millions of euros / Tuesday's devastating floods have reignited a year's long debate / Venice have been dealing with flooding for centuries / the buildings do not have proper foundation / other notable sites have been affected / the channels have been further deepened / hotels have been affected, cafes have been affected* | 86 / 14 |
| were | 55 | *There were waves as if we were at the beach / On Tuesday night as epic floodwaters were rising in Venice works were monitoring the cathedral's ornate and ancient flooring/parts of the church were covered in a foot of water / many squares and passages between building were left deep underwater/corruption ties were found in the construction of the barriers* | 49 / 51 |

*First designed in 1984, works for the project began in 2003 and were expected to end in 2011. But construction has yet to be completed (the due date is now 2022), due to delays and a number of issues.*

*But while MOSE could buy the city some time (around three decades, according to environmental engineers) if and when it becomes functional, studies have shown that climate change might push Venice underwater within the next 100 years.*

Modality is activated through different features in the text (modal verbs; modal adverbs and adjectives, conditional structures). The most frequent way of expressing modality within the analysed discourse is the modal verbs usage of *could*, *would, can*. Modal verbs *could* and *can* are mainly used: to express ability *But while MOSE could buy city more time; You can learn more about the MOSE construction plan;* to express something that is not true/forbidden *We can't wait time, We can't like this;* to express unrealized past abilities *They said corruption had repeatedly delayed a barrier protection system that could have prevented the disaster*. The modal verb would is used to describe a prediction (hypothetical situations) *the government would give us some money at least to repair the first damages*; to sound impolite when disagreeing *I would argue that the number one danger is sea level rise.*

The overall modality helps the news to sound more direct and produce a considerable impact on the audience that realizes the missed possibilities and opportunities of the city protection system.

The category of implying and assuming refers to the pragmatic level and deals with a presupposition. An existential presupposition, which is the assumption of entity existence, can be illustrated on the examples of the most frequent lexical n-gram – *the city*: *When I went out the day after the flooding, I met a kind of funeral in the city* (the city exists and has a dramatic situation that is similar to the funeral). This disastrous atmosphere is also strengthened by the metaphoric usage *the city is on its knees*. Factive presupposition, the assumption that is true, can be identified for example by the verb 'know' *Venice is susceptible to some flooding – or 'aqua alta,' as it's regionally known – every year when high tides mix with heavy rain and strong winds* that underlines the fact that the situation for Venice is not new because it takes place practically every year. Lexical presupposition is the presupposition when one word with asserted meaning is interpreted in the way that another non-asserted meaning is understood *A flood barrier designed to protect Venice from high tides is not expected to start working until the end of 2021* with the project plagued

by the sort of problems (the meaning is that the there is a project but it takes too much time to finish it because of various problems that can be caused by corruption, cost overruns and prolonged delays). The same idea is also expresses through logical presupposition by means of the word 'however' *Construction of the "MOSE" system began in 2003 and was set to be completed by 2011, <u>however</u> it is still unfinished and is now predicted to be ready by the end of 2021* and counterfactual presupposition (the assumption that it is opposite of what is true, or contrary to fact) *The project that broke ground in 2003 and initially had a 2011 deadline, <u>would have provided</u> protection from tides up to 10 feet tall.*

Presenting other's speech and thoughts is another aspect that deserves particular attention in case of Critical Stylistic analysis. The ways journalists position themselves and their news to other authors and other news/texts contribute significantly to the version of reality they end up portraying [10]. There are many different ways authors might represent the words of other people in their news. They might quote them directly using various reporting verbs: *"The problem is extremely complex, I really hope that this is a wake up call for the people who are in charge," says Paola Rizzoli, a professor of physical oceanography at MIT.* In the given example, the effect of direct quotation can be to validate the words of the educated person by implying that what he said is so important and profound that it is worth repeating word for word.

Another way authors represent the words of other people is to paraphrase them. This gives authors more flexibility as they can either characterise these words in ways that support their point of view or vice versa. *Venice authorities have been warning the level of tourism is unsustainable. They floated ideas of introducing an entry charge and banning day trippers and huge cruise liners that cause environmental damage and spoil the views.* In this case, the paraphrase creates a distance between the author and the words he or she is quoting and implies a certain skepticism towards those words.

Also, the journalists employed a mixture of quotations and paraphrases (selective quotation), using quotation marks only for selected words or phrases. This is most often done when authors want to highlight particular parts to attract the audience's attention: *A local resident on Facebook praised the group for "going around asking residents and commercial activities if they need help."*

One more common way to appropriate the words of others is by not attributing them to another person at all, but by simply asserting (assertion) them as facts. *The state of emergency was declared on Thursday night.* The stated sentence illustrates the example of assertion when the words of Italian Prime Minister Giuseppe Conte are reported to present his voice.

In conclusion, we would like to say that the natural disaster discourse can be defined as a collection of various texts and utterances in written or oral forms that describe the hazardous situation caused by a sudden and violent event in nature. The purpose of the natural disaster discourse is 1) to present the information about material and economic loses; 2) to discuss the environmental concerns if the situation was influenced by the climate change problems or other terrible events in nature; 3) to highlight the protection means that are developed to prevent the repetition of the situation; 4) to show the reaction of the people towards the disaster; 5) to give some additional information about the situation and its background.

If we refer to the stylistic peculiarities of the analysed type of the discourse, we can say that among the most frequent nouns we are expected to meet the ones that state the natural disaster itself as well as the location where the event took place. The analysis of pre- and post modifies shows the domination of adverbs, participles, and adjectives with the negative connotation to illustrate the damages. The same can be said about the most frequent verbs that cover the spheres of disruption (*to damage*), protection (*to protect*) and cost (*to cost*).

The distribution of Active and Passive construction within the texts demonstrates that past passive constructions tend to be more popular in case of destruction descriptions, while present active is used to describe the current situation.

The category of equating and contracting is also widely presented in the natural disaster discourse in order to contract the inaction of the government and the hidden problems of the society that are revealed after the flood. The same function is fulfilled by the usage of different modal verbs and various types of presuppositions that strengthen the position of the journalists toward the whole situation. The journalists' opinions are also viewed by means of quoting that allow the writer either to attract the audience's attention to some important aspects or to express the skepticism.

In summary, we can say that the usage of various methods of critical discourse analysis, corpus linguistics and critical stylistics provides the scientists with a comprehensive list of tools to conduct a qualitative analysis of the chosen material.

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# ЛИНГВИСТИЧЕСКИЙ АНАЛИЗ ПРИРОДНЫХ КАТАСТРОФ В МЕДИАДИСКУРСЕ

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В настоящее время природные катастрофы все чаще оказывают существенное влияние на жизнь миллионов людей во всем мире. В связи с этим актуальным становится вопрос, посвященный лингвистическому анализу природных катастроф в медиадискурсе. Данная статья представляет собой комплексное исследование, в котором на материале новостных статей авторы выделяют основные тематические и стилистические особенности изучаемого дискурса. На основе методов корпусной лингвистики были выявлены наиболее частотные лексические единицы, относящиеся к различным частям речи, что позволило авторам провести тщательный анализ грамматических и лексических особенностей новостных статей, описывающих природные катастрофы. В заключение были сделаны наиболее существенные выводы, касающиеся результатов проведенного исследования.

*Ключевые слова: анализ дискурса, природные катастрофы, стилистический анализ, корпусные исследования, частотность.*

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