

FRAMING OF SEA LEVEL RISE IN NEWS HEADLINES: A STUDY OF *THE GUARDIAN* AND *THE NEW YORK TIMES*

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The deepening of the environmental crisis brings an increased need for clear and targeted communication about environmental issues, leading to greater environmental awareness and encouraging the necessary changes in people's behaviour. The way the media frames reports on environmental issues, such as climate change, plays a crucial role in the efficient communication of these issues. This paper examines how sea level rise was reported in the digital editions of *The Guardian* and *The New York Times* in 2022, utilizing framing theory – a theory that is used in textual linguistics to study texts on socially important topics in public discourse. The study identifies the predominant generic frames in the headlines and subheads of these articles, which are the key framing locations. A comparative analysis also reveals differences in the framing of sea level rise in the two newspapers.

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OKVIRJANJE DVIGA MORSKE GLADINE V NASLOVIH ČLANKOV: ŠTUDIJA ČASOPISOV *THE GUARDIAN* IN *THE NEW YORK TIMES*

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Ključne besede:
podnebne spremembe,
okvirjanje,
generični okviri,
časopisni naslovi,
dvig morske gladine

S poglobljanjem okoljske krize narašča tudi potreba po jasni in ciljno usmerjeni komunikaciji o okoljskih temah, ki bi pripeljala do večje okoljske osveščenosti in spodbudila potrebne spremembe v navadah in vedenju ljudi. Način, kako mediji poročajo o okoljskih temah, kot so podnebne spremembe, igra ključno vlogo pri učinkovitem komuniciranju teh tem širši množici. V pričujočem prispevku smo analizirali članke na temo dviga morske gladine, ki so bili objavljeni v digitalnih edicijah časopisov *The Guardian* in *The New York Times* v letu 2022, s pomočjo teorije okvirjanja, ki se uporablja v besedilnem jezikoslovju za proučevanje besedil javnega diskurza o družbeno pomembnih temah. S pomočjo analize smo odgovorili na vprašanje, kateri generični okviri prevladujejo v naslovih in podnaslovih člankov kot ključnih lokacijah okvirov. Primerjalna analiza je razkrila tudi razlike v okvirjanju dviga morske gladine med obema časopisoma.



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1 Introduction

The environmental crisis is intensifying, necessitating clear and targeted communication about environmental issues to raise awareness and drive behavioural change. Analysing media reports on environmental issues is pivotal for understanding what constitutes effective communication in this domain. This paper examines how sea level rise was reported in the digital editions of *The Guardian* and *The New York Times* in 2022, utilizing framing theory—a tool in textual linguistics for analysing texts on socially significant topics in public discourse. The study identifies the predominant generic frames in the headlines and subheads of these articles and conducts a comparative analysis to highlight differences in how the two newspapers frame the issue of sea level rise.

The concept of framing has been used in communication and media studies to describe the linguistic cues that guide the audience in their understanding through the defining and presenting of an issue. Frames are thus considered to consist of linguistic cues that reflect the persuasive aspects of the text by emphasizing specific aspects of the news stories at the expense of others. Framing used by the media can thus be important in shaping public opinion. At the same time, framing theory has heterogeneous roots and is, as noted by de Vreese (2005, p. 51), referred to with significant inconsistency in the literature. As Tannen (1993, p. 15) observes, framing is an umbrella term for a cluster of related concepts, including scripts and schemata. All these concepts, however, have in common that they imply the existence of cues that direct the readers' understanding of the issue; these concepts will be further examined in section 2. In Section 3, framing will be applied to the study of news reports on sea level rise from *The Guardian* and *The New York Times*, focusing on the headlines and subheads as the key framing locations.

2 Framing Theory

The theory of frames in text linguistics and discourse studies is diverse and multi-disciplinary. The concept is based on a common theme across fields, specifically, the role of expectations in language production and comprehension (Tannen, 1993). According to Tannen (1993), framing in discourse is revealed through linguistic features such as omission, repetition, contrastive conjunction, and evaluative language. The concept of frames first emerged in early 20th-century psychology,

with key contributions from psychologists (e.g., Bartlett, 1932), and later also from early theorists of artificial intelligence, e.g., Minsky (1974) as well as sociologists (e.g., Goffman, 1974). Goffman (1974) in his work *Frame Analysis* suggested that frames are the mental structures that help people understand and interpret the world and organize their experience. Goffman focused on how individuals use frames daily, and his work has been foundational in developing framing theory, especially in understanding how individuals and groups use frames in everyday life. His ideas were later adapted to media and communication studies by mass communication scholars. Tuchman (1978), for example, wrote one of the early works analyzing how the media constructs reality through framing by pointing out how journalists select and shape news stories to convey particular meanings and perspectives. In linguistics, the concept was further developed by Chafe (1977) and Fillmore (1975), and later by cognitive linguists (e.g., Langacker, 2008), who conceptualized frames in the context of the semantic meaning of words. The last decade of the 20th century saw a proliferation of frame studies applied to media discourse. Iyengar (1991), for example, examined how public discourse was influenced by framing issues discussed on television. Similarly, Gamson and Modigliani (1989) explored the role of media discourse in the social construction of reality.

The central figure of modern framing theory in mass media is Entman (1993), whose definition of framing is closely related to media discourse and persuasive mass communication. Entman (1993) applied framing theory to mass communication to explore how the media and other communicators shape the audience's perception and interpretation of information by selecting certain aspects of reality and presenting them in particular ways. According to Entman's (1993) understanding in the context of mass communication, framing has a persuasive function as it refers to how media outlets construct and emphasize perspectives, i.e., frames, to influence public opinion and interpretation of events, issues, or topics.

Entman's widely cited definition (1993, p. 52) posits framing as a process of selecting some aspects of a perceived reality and making them more salient in a communicating text:

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 for the item described.

According to Entman's definition, framing as a feature of discourse thus typically includes the following key elements:

- a) Selection: Not all aspects of reality are encoded; some are left out.
- b) Salience: Some ideas are emphasized and made more noticeable, meaningful, or memorable.
- c) Problem definition: The issue is identified as a certain kind of issue (e.g., an issue of medicine, law, human rights, economics, etc.).
- d) Causal interpretation: The explanation of what or who causes the issue is given.
- e) Moral evaluation: The expression of judgment is given about the problem or people involved.
- f) Solution recommendation: Treatment or actions are proposed to solve the problem.

This framework has proven especially useful for analyzing news and political communication in studies of media bias, agenda-setting, and discourse analysis. Among scholars who examined the linguistic implications of Entman's definition of frames is Dahl (2015), who has made significant contributions to framing studies, particularly in scientific communication and climate change discourse. Her interdisciplinary research, often at the intersection of linguistics, media studies, and environmental communication, offers insights into how language shapes public understanding of complex issues such as climate change. In her 2015 study, Dahl explored how journalists employ rhetorical strategies to frame contested scientific topics such as geoengineering. She applied text linguistics to identify key framing locations within news reports, emphasizing the role of headlines, genre features and evaluative language in shaping readers' perceptions. This approach highlighted the active role of journalists in constructing narratives around scientific issues. Dahl (2015) emphasizes that headlines are key framing devices that set the interpretative frame for the news article and often carry evaluative language that reflects the stance of the writer or the media outlet. Newspaper headlines, which also provide the material for the study below, thus exhibit distinctive linguistic features that

differentiate them from standard prose (Reah, 2002). The features of headlines, such as metaphors, puns, and rhetorical devices, are strategically employed to capture readers' attention, convey information succinctly, and thus provide an essential framing location.

Some media theorists also posit a hierarchy of frames. Semetko and Valkenburg (2000), for example, distinguish between issue-specific frames, which are applied within a particular domain, and generic frames, which are applied universally. In their view, generic frames are overarching interpretive structures employed by journalists to present news stories in a way that resonates with audiences. These frames are not tied to specific topics but are broadly applicable across various issues, shaping how information is generally perceived and understood. In their analysis of news stories, Semetko and Valkenburg (2000, pp. 95-96) identify five primary generic frames in news stories: conflict, responsibility, morality, human interest, and economic consequences (see Section 3). These frames will be further explored in the study of headlines and subheads concerning sea level rise in *The Guardian* and *The New York Times*, two mainstream English-language newspapers. Headlines and subheads have been selected for the analysis as they are considered by Tankard (2001 p. 101) as one of the most important “focal points for identifying and measuring news frames” (as cited in de Vreese, 2005, p. 34). Dahl also argues that headlines, together with leads and sources' statements, are “key framing locations” (2015, p. 45) in news reports.

3 Analysis of Generic Frames in Newspaper Headlines and Subheads

This section examines the headlines and subheads of newspaper articles reporting on sea level rise that appeared in the digital versions of *The Guardian* and *The New York Times* in 2022 in terms of the generic frames that they contain. Semetko and Valkenburg's (2000) theory of generic frames is used, which identifies five generic news frames: the *conflict frame*, which “emphasizes conflict between individuals, groups, or institutions” (2000, p. 95); the *human interest frame*, which “brings a human face” (2000, p. 95) to the presentation of an event by emphasizing its impact on individuals or groups and by introducing an emotional angle through the use of emotional or dramatic language to evoke feelings of empathy or sympathy; the *economic consequences frame* that reports an event “in terms of the consequences it will have economically on an individual, group, institution, region, or country” (2000, p. 96); the *responsibility frame* that attributes responsibility for the cause of or solution to

the problem to the government or to a group or an individual; and the *morality frame* which “puts the event, problem, or issue in the context of religious tenets or moral prescriptions” (2000, p. 96).

3.1 Generic Frames in *The Guardian*

Sixteen articles reporting on sea level rise appeared in the digital edition of *The Guardian* in 2022. Some of them were part of a thematic series on environmental issues, such as “Terrawatch” (2 articles); “Seascope: the state of our oceans” (2 articles); and “America’s dirty divide” (1 article), which is a series focusing on environmental inequalities in the US. One article was published in the “Weatherwatch” column, which investigates stories in connection with the weather, and one in “The Big Idea” section, which addresses up-to-date questions. In the following, the headlines and subheads of the sixteen articles will be examined in terms of generic frames. The articles are listed chronologically, from the earliest to the most recent.

Example 1

The headline: **US sea level to rise as much in next 30 years as in past century – study**

The subhead: **Seas rising faster around the US than global average will cause ‘dramatic increase’ in number of people vulnerable to flooding**

The article appeared in the series “Seascope: the state of our oceans”. There is no explicit generic frame found in the headline; however, the human interest frame is implied by mentioning a particular country, the US, in connection to the rapid sea level rise. In the subhead, the generic frame of human interest is explicit, as the consequences for people are highlighted; additionally, dramatic (“dramatic increase”) and emotional (“vulnerable to flooding”) is used, adding an affective angle.

Example 2

The headline: **How can we adapt to life with rising seas?**

The subhead: **Traditional defences may fail, and migration won't be possible for everyone. But we may yet find more creative ways to live**

The article appears in "The Big Idea" series. The generic frame in both the headline and the subhead is human interest. In the headline, the personal impact of the rising seas is emphasized by the question "how can we adapt". The human interest frame is then further emphasized in the subhead, which presents possible solutions for us, humankind, from an emotional perspective (traditional solutions "may fail"; "migration won't be possible for everyone"; we may find "more creative" solutions).

Example 3

The headline: **'It's happening now': how rising sea levels are causing a US migration crisis**

The subhead: **The coming mass migration of flood-prone areas will have huge social and economic costs – but the government doesn't have an adequate plan**

The human interest frame prevails in the headline, emphasizing the consequences that the rising sea levels will have on people in the US, and providing an emotional angle in the phrase "migration crisis", which is underscored by the dramatic effect of the progressive tense in the quoted sentence "(I)t's happening now". In the subhead, the economic consequences frame is added to the human interest frame, highlighting the great economic costs of mass migration, in addition to the huge social costs. In the last part of the subhead, the responsibility frame is added, which attributes responsibility for inaction to the government.

Example 4

The headline: **Sinking Maldives plans to reclaim land from the ocean**

The subhead: **Vulnerable island nation split over project to dredge millions of tonnes of sand to create land for resorts and industry on Unesco reserve**

The article appears in the “Seascape: the state of our oceans” series. The human interest frame is found in the headline, as the focus is on a specific country (the Maldives) that is impacted by the rising seas, and an emotional angle is added by the dramatic adjective “sinking”, characterizing the country. Additionally, the headline assigns credit to the Maldives for a plan, which also signals assignment of the responsibility frame. In the subhead, the human interest frame, emphasized by the emotional language (“vulnerable island nation”) is combined with the conflict frame, highlighting that the nation is split over the project intended to create land using sand from a Unesco reserve in order to build new tourist resorts. Additionally, the economic consequences frame is also found in the subhead, as it is indicated that the new resorts would “boost tourism” (Boztas, 2022).

Example 5

The headline: **Sea level rise in England ‘will put 200,000 homes at risk by 2050’**

The subhead: **Due to the climate crisis, within 30 years these costal properties will be potentially unsalvageable, researchers say**

The human interest frame is found in the headline, as the emphasis is put on the large number of dwellings (emotionally called “homes”) in a particular country (England) that will soon be at risk due to the sea level rise. In the subhead, the human interest frame appears together with the economic consequences frame; the term “homes” is replaced by “properties”, which highlights the economic value of the dwellings, while the adjective “unsalvageable” provides an emotional angle.

Example 6

The headline: **Fate of ‘sleeping giant’ East Antarctic ice sheet ‘in our hands’ – study**

The subhead: **Melting of the world’s biggest ice sheet would cause catastrophic sea level rise, but can be avoided with fast climate action**

The prevailing generic frame in the headline as well as in the subhead is responsibility. In the headline, the responsibility for what will happen to the East Antarctic ice sheet is attributed to all humans, as indicated in the set phrase “in our hands”. In the subhead, the attribution of responsibility is less direct, as the passive voice is used in “can be avoided”, not clearly indicating by whom. However, the emotional angle provided by the adjectives (world’s) “biggest”, and “catastrophic” is also an indication of the human interest frame, in particular since it is implied that the sea level rise caused by the melting of this, the biggest ice sheet in the world, would be “catastrophic” for humans.

Example 7

The headline: **Can nature-based alternatives to seawalls keep the waves at bay?**

The subhead: **Hard sea defenses prompted by extreme weather and rising sea levels can have unintended consequences down the coast – is there a better way?**

This article appears in the “America’s dirty divide” series; it is thus clear that the US coasts are referred to, although this is not specifically mentioned in the headline and the subhead. There is no specific generic frame in the headline; however, the human interest frame is implied by the question, as it indicates that seawalls and nature-based alternatives are intended for protection against the flooding of coastal cities and areas. The human interest frame is also found in the subhead, which highlights the consequences of sea defences, providing an emotional angle with the use of adjectives such as “hard”, “extreme”, and “unintended”. Additionally, the conflict frame is also implied in the subhead; this becomes more obvious when reading the whole article. As the author of the article points out, there is a potential conflict in using seawalls for protection, for while they can protect parts of the coast, they can “intensify surges at neighboring beaches and destroy nearby ecosystems” (Uteuova, 2022).

Example 8

The headline: **Major sea-level rise caused by melting of Greenland ice cap is ‘now inevitable’**

The subhead: **Loss will contribute a minimum rise of 27cm regardless of what climate action is taken, scientists discover**

There is no explicit frame in the headline; however, the human interest frame is implied, as the scientific prediction on the melting of Greenland icebergs and its consequences are presented from an emotional angle using dramatic language (“now inevitable”) to evoke fear and worry. In the subhead, the responsibility frame appears, or rather the lack of responsibility for what will happen to the Greenland ice cap, as the subhead suggests no climate action that we take will reverse the major sea level rise caused by its melting because it is too late for that.

Example 9

The headline: **Why future sea levels matter to Suffolk’s Sizewell nuclear plant**

The subhead: **Global coastal inundation is now expected to be far worse than previously predicted**

The article was published as part of the “Weatherwatch” series. The generic frame in its headline is human interest, since the headline places at the forefront the foreseen consequences of high sea levels on a particular community (a small fishing village in Suffolk, England) and the nuclear plant situated there. In the subhead, the dramatic comment that the expected coastal inundation will be “far worse than predicted” provides an emotional angle, suggesting a human interest frame as well.

Example 10

The headline: **Tintagel among castles at risk unless England can hold back the tide**

The subhead: **English Heritage identifies six most vulnerable sites as climate change intensifies coastal erosion**

A combination of two generic frames can be found in the headline: human interest and responsibility. The focus is on Tintagel, a well-known castle in England that is at risk of being affected by high tides, indicating a human interest frame; additionally,

responsibility for its fate is attributed to the country in general. In the subhead, only the human interest frame appears, placing Tintagel among the six English Heritage sites “most vulnerable” to coastal erosion, with “most vulnerable” providing an emotional angle to the scientific finding.

Example 11

The headline: **Why is sea level rising faster along China’s coast?**

The subhead: **Study says possible causes could include faster warming in Chinese seas and lower air pressure**

The article appears in the “Terrawatch” series. There is no explicit generic frame in either the headline or the subhead, as the cause-and-effect relationship is in the focus. However, both the headline and the subhead indicate urgency through the comparative form of the adjective “faster”, which points to an implied human interest frame.

Example 12

The headline: **Could a digital twin of Tuvalu preserve the island nation before it’s lost to the collapsing climate?**

The subhead: **With rising seas expected to submerge the nation by 2100, official says ‘we should always be able to remember Tuvalu as it is, before it disappears’**

In both, the headline and the subhead, the generic frame is human interest. The headline places the focus on Tuvalu, a small island country in Polynesia that is disappearing due to the rising seas. The emotional angle is provided by the dramatic statement that the island nation will be “lost to the collapsing climate”. In the subhead, the emotional angle is even more visible, particularly in the dramatic sentence “we should always be able to remember Tuvalu as it is, before it disappears”. These are words of “Tuvalu’s former attorney general and current high commissioner to Fiji” (Shepherd, 2022), referring to the project in which a digital twin of the island of Tuvalu was created.

Example 13

The headline: **East Antarctic glacier melting at 70.8bn tonnes a year due to warm sea water**

The subhead: **Denman glacier in remote part of the continent could become unstable, possibly contributing to more sea level rise than predicted**

The headline contains no explicit generic frame, as it merely places the cause-and-effect relationship at the forefront. The cause-and-effect relationship is visible also in the subhead; however, there is some indication of the human interest frame in the subhead implied by the use of emotional and dramatic language such as “unstable” and “more than predicted”.

Example 14

The headline: **Microphones dropped into ocean off Greenland to record melting icebergs**

The subhead: **Artist Siobhán McDonald will turn recordings into an acoustic installation exploring humanity’s impact on the ocean**

In both the headline and the subhead, the human interest frame prevails. While in the headline the human interest frame is implied rather than explicit, as “microphones dropped” only implies human involvement, it is more visible in the subhead, which places an artist and his work in the foreground. Additionally, the responsibility frame is also visible in the subhead, as the responsibility for the melting icebergs is attributed to “humanity”.

Example 15

The headline: **How to move a country: Fiji’s radical plan to escape rising sea levels**

The subhead: **In Fiji, the climate crisis means dozens of villages could soon be underwater. Relocating so many communities is an epic undertaking. But now there is a plan – and the rest of the world is watching**

The human interest frame prevails in both the headline and the subhead, as the focus is on one country, Fiji, and on the impact that the rising sea levels have on it, as well as on how Fiji intends to deal with the problem. Additionally, the dramatic language “escape rising sea levels” in the headline adds an emotional angle. In the subhead, the human interest aspect is further emphasized by focusing on Fiji’s villages and by dramatically calling the relocation of the communities “an epic undertaking”. Additionally, both the headline and the subhead also contain the responsibility frame, as the credit for taking action is attributed to Fiji.

Example 16

The headline: **The rise and bigger rise of Mediterranean sea levels**

The subhead: **Study shows sea level rise on Amalfi coast over last 20 years is twice that on Costa del Sol**

The article appeared in the “Terrawatch” series. There is no explicit generic frame found in the headline. The headline simply establishes that the Mediterranean sea levels are rising rapidly, without directly mentioning the consequences, although the dramatic language used (“the rise and bigger rise”) points to an implied human interest frame. In the subhead, the human interest frame becomes more explicit, for two specific Mediterranean coasts are mentioned as becoming impacted by the sea level rise, both of them famous tourist destinations.

3.2 Generic frames in *The New York Times*

This section provides an analysis of the generic frames that are contained in the headlines and subheads of eight articles reporting on the rising of sea levels which appeared in the digital version of *The New York Times* in 2022. The articles are listed chronologically, from the earliest to the most recent.

Example I

The headline: **Coastal Sea Levels in U.S. to Rise a Foot by 2050, Study Confirms**

The subhead: **More precise measurements indicate that the increase will happen “no matter what we do about emissions.”**

There is no explicit generic frame in the headline. The rise of sea level is merely presented as a prediction confirmed by research, with no mention of its consequences; however, the human interest frame might be indicated by the reference to a specific region, the US coasts. In the subhead, the responsibility frame is at the forefront, or rather, the futile nature of attributing responsibility, since the message is clearly that the sea level will rise regardless of whether we reduce emissions or not.

Example II

The headline: **Is This the Last Generation to Live on New York City’s Wild Fringes?**

The subhead: **A major restoration project aims to protect the Jamaica Bay area – and all of New York – by returning salt marshes and sand dunes to their natural states. But will it be too late for the people of Broad Channel?**

The generic frame in both the headline and the subhead is human interest. In the headline, the negative consequences of the sea level rise on a community in New York are given a human face, particularly through dramatic language (“Is this the last generation...?”). In the subhead, the project to save a specific coastal part of New York (Jamaica Bay) is highlighted, implying the responsibility frame; however, the emotional angle of the human interest frame is at the forefront, as seen in the dramatic question “Will it be too late for the people of Broad Channel?”

Example III

The headline: **New Research Forecasts More Dire Sea Level Rise as Greenland’s Ice Melts**

The subhead: **The study reached a more drastic conclusion than earlier assessments in part because it used a different method to gauge ice loss.**

The implied generic frame in both the headline and the subhead is human interest. Although no specific country or group of people is mentioned as being affected by the melting of Greenland's ice, the scientific prediction regarding the sea level rise is presented from an emotional angle, which is provided by the dramatic adjectives "dire" (in the headline) and "drastic" (in the subhead).

Example IV

The headline: **Billions in Climate Deal Funding Could Help Protect U.S. Coastal Cities**

The subhead: **Communities across the country hope to tap into funds from Democrats' new climate law to restore coastal habitats, part of a program that emphasizes nature-based solutions.**

In the headline, there is a combination of the human interest frame (the emotional angle of the story is visible in the statement "could help protect U.S. coastal cities") and the economic consequences frame (such protection requires substantial funding). Both frames appear in the subhead as well: the human interest frame is indicated in the focus on "communities" and their "hope" to acquire the funds, while the economic consequences frame is indicated by the mention of the government funds available for the restoration of coastal habitats.

Example V

The headline: **Review: The Sea Is Rising, but the Dance Goes On**

The subhead: **For her piece at Madison Square Park, Beau Bree Rhee has come up with a term, "climate change bodies," but not a dance vocabulary that expresses that idea.**

In both the headline and the subhead, the human interest frame prevails, as the focus is on an individual's response to the rising sea level through art. The article is a review of visual artist and choreographer Beau Bree Rhee's performance titled "Shadow of the Sea", which resonates with the predictions of the sea level rise in Manhattan, as it "draws on the research into maps projecting the future coastline of Manhattan" (Seibert, 2022).

Example VI

The headline: **I'm No Longer Sure New York Will Protect Itself From Rising Waters**

This is the headline of a guest essay written by a wine shop owner from Manhattan. The generic frame in the headline is human interest, as it centres on an individual's doubt that New York will be able to protect itself against the rising sea levels. In the essay, the author (Passanella, 2022) recalls the devastation he experienced when Hurricane Sandy hit the city in 2012; his doubt, or rather fear, concerning the future, which is echoed in the headline, is thus based on personal experience.

Example VII

The headline: **Why Is New York Still Building on the Waterfront?**

The subhead: **There are two simple reasons. One, it makes money. And two, people just love water.**

The headline contains the human interest frame, as the question refers to a specific community and their "behaviour". In the subhead, the human interest frame is even more explicit (one of the answers to the question from the headline being that "people just love water"); however, the economic consequences frame is also added by mentioning that building on the waterfront "makes money". Additionally, both the headline and the subhead also contain the responsibility frame, as New Yorkers are blamed for their insistence on living near water.

Example VIII

The headline: **Here's Where the U.S. Is Testing a New Response to Rising Seas**

The subhead: **Native American tribes are competing for the first federal grants designed to help move communities away from high water and other dangers posed by climate change.**

The headline contains the human interest frame, as a particular country is mentioned (the U.S.) in its search for a response to the rising sea levels. Additionally, the headline also contains the responsibility frame, as the search for the solution is clearly assigned to the U.S. (government). In the subhead, the human interest frame prevails (the Native American tribes are put in the foreground); however, it is combined with the conflict frame (the “tribes are competing” for grants) and the economic consequences frame (there are grants available to move endangered communities).

3.3 Discussion

Twenty-four articles reporting on rising sea levels were published in the digital editions of *The Guardian* and *The New York Times* in 2022, with twice as many appearing in *The Guardian* (16) compared to *The New York Times* (8). Among the eight articles published in *The New York Times*, all except one focus on the sea level rise affecting the US coasts and people. While one article reports on the grants available to help Native American tribes move away from endangered areas (Example VIII), three focus specifically on the New York coast and the consequences of the sea level rise for its inhabitants (Examples II, VI, and VII), while one presents a New York artist's response to this climate change issue (Example V). The only article in *The New York Times* not focusing directly on the US is a report on the new assessment of the sea level rise caused by the melting of Greenland's ice (Example III).

The articles appearing in *The Guardian*, on the other hand, cover a greater variety of issues connected to the rise of sea levels and focus on various countries and continents already affected or expected to be affected by this issue. Only three among the sixteen articles report on how the rising sea level will affect England

(Examples 5, 9 and 10), while one reports on the rise of the Mediterranean sea levels (Example 16), and the remaining twelve do not focus on Europe at all. Three articles are concerned with the consequences of the sea level rise for the US (Examples 1, 3 and 7), while four articles refer to other parts of the world – one reporting on the faster sea level rise along China’s coasts (Example 11) and three on the problems that island countries, such as the Maldives (Example 4), Tuvalu (Example 12) and Fiji (Example 15), are facing due to sea level rise. Additionally, two articles present scientific predictions on the melting of the ice, without referring to any specific country (Examples 6 and 8), while one discusses the ways in which people in general will need to adapt to the rising seas (Example 2). The remaining article presents an artist’s response to the melting of Greenland’s ice (Example 14).

The study of news headlines and subheads in both newspapers in terms of generic frames shows that the *human interest* frame prevails in both newspapers, as it has been identified in the headlines and/or subheads of eighteen out of the twenty-four articles examined. In the remaining six articles, the *human interest* frame is also implied, either in the headline or the subhead, mainly through the use of emotional or dramatic language. In several articles, the *human interest* frame is combined with another generic frame, most often with *responsibility* (10 times), but also with *economic consequences* (4 times), and *conflict* (3 times). In one case (Example VIII), a combination of three frames appears (*human interest*, *responsibility* and *conflict*, and in one other (Example 4), there is a combination of four frames (all frames except *morality*). Where there is a combination of two or three frames, the *human interest* frame is the most represented; only in Example 6, however, is the *responsibility* frame more explicit in the headline than the *human interest* frame. In the examples of headlines and/or subheads where the *responsibility* frame has been identified, the responsibility for finding a solution to the problem of the rising sea level or for inaction regarding this problem is attributed to governments (5 cases), while the responsibility for the occurrence of this environmental problem is only twice directly attributed to humans (in Example 6, which points out that the fate of the East Antarctic ice sheet is “in our hands”, and Example 14, which presents an artist’s plan to show “humanity’s impact on the ocean” by recording the sound of the melting icebergs). In two examples, the *responsibility* frame points to a lack of responsibility or rather the futile nature of attributing responsibility (Example 8: the rise of the sea level is “inevitable”, “regardless of what climate action is taken”; and Example I: the increase of sea level will happen “no matter what we do about emissions”). There

are a few examples of headlines and/or subheads that focus on the causes and effects of sea level rise and only implicitly entail the *responsibility* frame, without explicitly assigning blame or credit to individuals, groups, or institutions. This happens especially in cases where causality is expressed through emotional language, such as Example 3 (“‘It’s happening now’: how rising sea levels are causing a US migration crisis”), which can thus be assigned a *human interest* frame. We have also come across examples of headlines and subheads that foreground causal connections through neutral language, which means that the *human interest* frame cannot be assigned. Such is the headline in Example 1 (“US sea level to rise as much in next 30 years as in past century – study”); however, the subhead in this example contains an explicit *human interest* frame. The *conflict* frame appears only in three examples (Examples 4, 7 and VIII), where it is located in the subhead, while no example of a *morality* frame has been identified in the examined cases.

A comparison of the framing of sea level rise in both newspapers shows that both these newspapers tend to report on scientific findings and predictions regarding the rising sea level from an emotional angle, using dramatic language such as “*dramatic increase*” (Example 1), “*catastrophic sea level rise*” (Example 2), “*dire sea level rise*” (Example III) or emotional language, such as “*vulnerable island nation*” (Example 4), also in combination with modifiers, such as “*far worse than previously predicted*” (Example 9) (the italics added by the authors). Additionally, the reports in both newspapers are given a human face by placing a country, a community, and in one case also an individual (Example VI), affected or in danger of being affected by the sea at the forefront. This points to both newspapers’ tendency to storify science reports by using the *human interest* generic frame. The *responsibility* frame, which in some examples appears in combination with the *human interest* frame, is more often found in *The Guardian* (in almost half of the articles compared to one fourth of the articles in *The New York Times*), while the *economic consequences* frame in combination with the *human interest* frame is more common in *The New York Times* (appearing in 2 articles out of 8, whereas in *The Guardian* it appears only in 2 articles out of 16).

In a few examples examined in the study, none of the five generic frames was identified as explicit in the headline. These are cases that foreground causal connections through neutral language (e.g. headlines in Examples 1, 11, 13 and I), which means that the *human interest* frame cannot be assigned; however, there seems to be no other adequate frame label in Semetko and Valkenburg’s (2000) theory of

generic frames. The lack of an explicit frame label for such examples could be remedied by adding an additional generic frame category of cause-effect, which focuses on phenomena linked through causality.

4 Conclusion

The study has shown that in 2022, the topic of sea level rise was covered more extensively in the digital edition of *The Guardian* (16 articles) than in the digital edition of *The New York Times* (8 articles). While *The New York Times* reported on this environmental issue mostly in terms of how it would affect the US, *The Guardian's* reports did not focus solely on the consequences of sea level rise for Europe but included countries from other parts of the world, such as the US, China and the Maldives. Both newspapers reported on the sea level rise predominately using the human interest frame in the headlines and/or subheads (in some cases in combination with another frame), as the emphasis was placed on the consequences that the rising seas would have on a particular country, community or individual. Additionally, an emotional angle was added to the reports through the use of dramatic or emotional language, such as the adjectives “dire,” “catastrophic,” and “vulnerable.” The second most common frame was responsibility, which mostly appeared in combination with the human interest frame and was more often found in *The Guardian*. The economic consequences and conflict frames appeared in only a few cases, while no example of the morality frame was identified. Framing the issue of the rising sea level in the human interest frame means, according to Valkenburg et al. (1999, p. 51), that the issue is made more personalized, dramatized and emotionalized, thus giving it a narrative character. This way, news reports on challenging issues such as climate change acquire a greater potential to influence readers’ perception and possibly lead to greater environmental awareness.

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