



A critical discourse analysis of linguistic framing in climate change skepticism across media and political narratives

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Abstract

This article contributes to the expanding research on Climate Change (CC) discourse by analyzing the narrative presentation of CC stories on Mongabay, a news platform dedicated to environmental concerns. This research examines research papers to evaluate the emergence of climate agendas throughout these times. In conjunction with Critical Discourse Analysis (CDA), Stibbe's comprehensive Ecolinguistics (EL) structure is employed to examine the corpus. A proposed methodology is modified to classify the articles into various categories of CC narratives: Ecoactivist, Intelligent Growth Reformer, Ecomodernist, and Lukewarmer (LW). This research does not identify the LW narrative because it posits that CC is not a crisis. The corpus analysis indicates a prevalence of narratives advocating for preserving nature, critiquing governmental environmental responsibilities, and endorsing policy and technology advancements. This research offers a perspective on media and political narratives on the environment across civilizations. Increasing the database size in future investigations would provide a more comprehensive analysis of EL terms.

Keywords: Critical discourse analysis, Linguistic framing, Climate change, Media and political narratives

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Introduction

The previous decades have demonstrated an increasing urgency about Climate Change (CC) (Stern, Stiglitz and Taylor, 2022). Media coverage aims to inform the public about the subject while issuing grave warnings on the potential horrors of a natural disaster for humanity (Saidova *et al.*, 2024). Despite these ostensibly dire forecasts for the foreseeable future, skepticism and overt denial regarding manmade CC persist. This underscores the effectiveness of ecological news coverage to date, as most public understanding of CC is predominantly sourced from news media (Chatterjee and Singh, 2023; Yeo and Jiang, 2024). Ongoing efforts are required to promote and enhance comprehension of communication methods that motivate individuals to save the natural world. Language does not merely mirror reality; it actively creates it (McLoughlin, Giffkins and Bellamy, 2023).

The study is predicated on the concept that media portrayals of environmental debates shape human perceptions and responses to ecological concerns. In the past decade, the public discussion of CC has generated various discourses stemming from particular concepts, judgments, and evaluations of the issue (Skukauskaitė and Girdzijauskienė, 2021). This paper's idea of discourse is rooted in the Foucauldian principle, a fundamental aspect of Foucault's work (Süren and Angin, 2019). The language research employed is not neutral; it reflects power relationships, and the discourse that underpins the psyche influences it in various ways, contingent upon unavoidable interests or patterns of

power (Trivan, Tošić and Todorović, 2020; Macgilchrist, 2021).

Narratives serve as a means to enhance comprehension of language and its communication. The digital age has significantly expanded options and competitiveness in news stories, fundamentally transforming the financial aspects of journalism (Laurinavichyute, Yadav and Vasishth, 2022). A reaction to these obstacles is the growth of digital-native journalism approaches, represented as media and political narratives focused on specialist topics like environmental problems (Karimov *et al.*, 2020). This research analyzes the narrative depiction of ecological information, namely CC articles posted on Mongabay.co.id, a non-profit news portal dedicated to environmental problems. The study seeks to elucidate the discursive construction of storylines in CC narratives and to comprehend the methods employed to affect individuals using language strategies (Sun *et al.*, 2010).

Numerous theories provide significant insights for narrative analysis (Verma and Pillai, 2023). The study will adopt the Ecolinguistics (EL) structure as delineated (Carter and Heinriksen, 2023). ELs is an academic domain that integrates the natural sciences with the humanities (Tan, Sarmiento and Rosales, 2024). This method enables examining language via an environmental viewpoint, elucidating how contemporary environmental realities are formed and how they might be modified (Zou and Liu, 2024). The EL structure is suitable for investigating stories, as it is expected to provide greater awareness of the actual and social-ecological contexts

in which every language functions and how vocabulary and discussions, in turn, affect the ecology and the natural world (Fang, Li and Cheng, 2024).

Background

Discourse and Framing in Journalism

The notion of discourse is multifaceted, broadly interpreted, and possesses diverse significances based on its environment. Derived from the Latin "discursus," signifying "running to and out of," discourse typically denotes "written or spoken interaction." However, Foucault has expanded this definition by characterizing discourse as a rule-governed framework for declarations, an autonomous object constructed through discursive tactics, ideas, and enunciative methods. In Foucault's terminology, discursive production can be defined as the systematic arrangement and organization "among objects, categories of declarations, ideas, or thematic selections."

In current literature, a persistent interaction exists between speech and story. Narrative structures and stylistic organization are evident in written content at the discourse stage. At the same time, in social communication contexts, the complete interactive narrative process is analyzed at the discourse layer (Bond, 2025). The research posits that narrative plays a crucial role in shaping the perception and communication of discourses. While neither idea is consistently presented clearly or utilized together, narrative in a Critical Discourse Study (CDS) (Jain and Chatterjee, 2024) parallels the concept of discourse. This connection likely

elucidates why discourse theories and their different methodologies are the predominant frameworks in language study, especially in journalism. The connection between narrative and media can be inferred from several investigations into how media and other journalistic forms operate as narratives. Examining news as tales inherently suggests that journalism, as a domain of textual execution, reveals profound social connections and cultural significance.

Likewise, studies consider narratives to have a significant role in shaping news comprehension as a form of public discourse among media professionals and academics, and they examine how narrative aspects influence audience perception and engagement with news. Upon reviewing the scholarly histories of news, telling stories, and narratives, the research delineates narrative into three separate measurements: (1) as a kind of general discourse, (2) as a broad category of news, and (3) as a specific type of news.

Ecological Discourses in Environmental Journalism

The existence is shaped by narratives that normalize social constructs; the research experiences life through narratives that embed socially recognized symbols, influencing interpersonal interactions, relationships with other beings, and the environment. The ecological degradation indicated or depicted in these narratives is an identification criterion. If they incite or facilitate harm to living organisms and the environment, they are considered destructive; if they foster protective thoughts and actions, they are considered beneficial. These affirmative narratives serve as alternatives to detrimental ones

by emphasizing nature in its intrinsic state rather than as a commodity to be abused (Volberda *et al.*, 2021).

ELs can examine the prevalent language habits influencing individuals' perceptions and interactions with the external environment. It can examine what Stibbe calls the "narratives the research inhabits," the cognitive frameworks that affect the conduct and underlie the environmental challenges.

The model amalgamates ecological linguistics and Critical Discourse Assessment (CDA) and analyzes human interaction and the natural environment (Abbas *et al.*, 2024). CDA examines the concealed, ambiguous, and overt structures of authority, prejudice, authority, and control as expressed through language. In contrast, ELs uncover latent narratives and raise the inquiry of whether these narratives motivate individuals to protect or jeopardize environments essential for life.

Several previous research has employed a comparable, if not identical, EL methodology with media content. One study addresses ecological linguistics's mathematical and practical dimensions by examining the eco-lexicon's significance in preservation news. In contrast, another study investigates the linguistic characteristics of news stories and explores how language shapes the reader's ecological consciousness. Investigations focus more on the narrative structure of news articles (Zhang and Xiao, 2024). Their research modifies Stibbe's methodology to examine environmental articles in prominent newspapers.

Environmental Outreach and Digital Media

Since 1975, reporting has been a significant area of interest for communication among environment specialists, particularly concerning print media. It has been definitively demonstrated that technological improvements over recent decades have profoundly influenced the structures of journalism, encompassing news generation and shipping, as well as the authority granted to specific performers, actants, and actions. This perspective delineates three interrelated transformations in environmental reporting: (1) the deterioration of conventional news outlets, (2) the proliferation of the web and social networking sites, and (3) the broadening of perspectives and substance in the general conversation. The research indicates that although numerous journalists focused on science and environmental topics have been displaced, the electronic transmission of news has facilitated the emergence of niche and specialized websites, offering the media new job possibilities and the potential to redefine the global coverage of ecological risks. These investigations substantiate that, in the context of the increasing prevalence of online networking and mediums, "the specialty" has persistently established itself in swiftly evolving media ecologies.

Niche reporting, or narrowcasting, is a form of journalism that focuses on specific demographics and delivers material centered on specialist topics. This involves "digital-born" media entities and specialty niche websites, many of which concentrate on

environmental and CC reports, which are not only extensions of conventional journalism but have evolved beyond criticism to provide original reporting.

An exemplary specialized site focused on ecological problems is Mongabay. Mongabay is a non-profit digital news and analysis outlet that employs over 800 journalists in around 70 countries, producing unique reports in many languages. Initially launched, the site has evolved into a prominent source of ecological data frequently utilized by reputable media outlets and extensively acknowledged by civil society groups and government organizations. The inauguration of Mongabay.co.id, the equivalent of the ecological news service, is reported to be the inaugural initiative under the worldwide Mongabay umbrella.

Materials and Processes

This study investigates hypotheses and conducts inquiries using the analysis of historical tweets by Congress representatives. The methodological framework is based on CDA, which posits that social connections and interactions influence linguistic activity. Within the CDA paradigm, discourse is regarded as a product of society, and writings are examined within their historical and political settings. This viewpoint enables linguistic examination to effectively scrutinize the religious processes that shape the dynamics of power and control systems. The present research utilized automatic computational techniques for language analysis to examine thematic (macro-level) and aesthetic (micro-level) elements of conversation. The research

discussed the ideological opinions of Congress participants, their presentation of moral bases, and framing methods in their political views concerning warming temperatures, emphasizing their party proof of identity, particularly those associated with the Democratic or Republican events.

Information

Tweets were gathered utilizing the authorized Twitter Historical PowerTrack Application Programming Interface (API). The requirements for inclusion are outlined below: (1) Tweets must include at least one of five specified climate-related phrases (the environment, becoming warmer, green, power, contamination); (2) Tweets have to have been published, encompassing the duration of the 112th to 118th Conventions; (3) Tweets have to be sourced from confirmed finances; (4) unique tweets are eligible, excluding responds and retweets; (5) Tweets need to be written in English. The raw data was preprocessed to keep only essential details, including creation time, tweet ID, entire text, and user ID. The group of analyses comprised single messages, each recorded and correlated with the respective lawmakers in office throughout that timeframe. The database comprises 95k messages, including 61k from Democrats and 34k from Republicans.

Methodology

CDA, especially studies on the framing of CC and worldwide environmental problems, is an approach that is gaining traction across other disciplines. CDA is a conceptual and empirical framework grounded in political ecology that

perceives language as a social activity and examines the social settings in which symbols are utilized and signify power. Political ecologists highlight how global CC management established procedures that position scientists and policymakers as the primary actors in CC stories. This leads to prevailing narratives of modernizing the environment that concentrate on public CC discussions on the financial burdens of policy measures, the preference for decentralized vs. centralized organizations, and comparing the expenses of action against its benefits. A prevalent counter-narrative to environmental modernity, sometimes linked to CC denier initiatives, involves the utilization and contestation of scientific agreement over the necessity for CC response.

CDA is an analytical paradigm that enhances comprehension of scientific learning discourses in manuals and curriculum papers. As texts-in-context, CDA entails a meticulous analysis of verbal and visual communication in educational materials that facilitate the advancement of scientific knowledge. CDA facilitates an exploration of how linguistic selections interact to (re)produce the social interactions, views, and dynamics of power upheld by coordinated CC denier campaigns. The fundamental strength of the reactionary echo chamber appears to reside in its capacity to exclude alternative discourses, constraining the understanding and convictions necessary to contest CC skeptics.

Framework Analysis

The research utilized a hybrid computer-assisted methodology that combines corpus-linguistic approaches with

deductive human categorization to examine how lawmakers articulate CC on Tweets. This methodology commenced with linguistic research and identifying prospective frames and their corresponding framing devices. The research advanced to a deductive phase in which parts were coded according to theory-driven structures, and then the original corpus was categorized utilizing frame vocabulary. To ascertain lexical significance within the extensive corpus, the research first compiled a list of terms by contrasting their usage with the reference collections, extracting unique linguistic features of Congress members' environmental talk on Twitter.

Employing corpus linguistic methodologies, the research identified the top 100 phrases, conforming to recognized standards to provide an accurate summary of the corpora. In the subsequent qualitative evaluation, the research organized these top 100 phrases into conceptually coherent clusters and then inductively categorized the resulting semantic clusters into six established frameworks of CC discussion. The study performed a collocation evaluation, enabling us to identify phrases pertinent to the frames.

The research utilized Mutual Information (MI) ratings to assess the association intensity of terms within a five-word vicinity, applying an MI score limit of two. This examination of collocational tendencies uncovered extensive linguistic frameworks and aided in exploring discourse framing. The generated dictionary for each general frame, composed of unigram lexicons containing keywords and their

corresponding collocates, functioned as frame markers as outlined.

Finally, the research utilized the Linguistic Inquiry and Word Count (LIWC) method to correlate Twitter content with recognized frame vocabulary. This technique entailed quantifying the word count linked to every frame, computing the proportionate picture of every frame corrected for tweet width, and ascertaining the tweet's predominant frame by finding the most related terms.

Tweets that did not align with any recognized framework were classified as "Others." AntConc and programming with Python enabled the keyword extraction process, collocation evaluation, and LIWC computations, respectively. Instances of tweets from both factions for each generic frame are presented. These samples were chosen based on the most excellent LIWC ratings inside every frame while considering variances among lawmakers to provide a thorough overview. The frame analysis exclusively identifies the general frames associated with CC. Political speech encompasses the entire range of moral grounds within every framework. The "scientific Doubt" framing encompasses tweets claiming both "CC is genuine" and "CC is a fraud."

CDA of Linguistic and Rhetorical Techniques

The study employed CDA as a complete framework to elucidate the linguistic and rhetorical methods utilized in depicting CC. The fundamental principles of social constructivism and power dynamics are essential to CDA's endeavor to reveal the underlying ideologies and discourse

frameworks that shape meaning and alter perceptions of reality. Through purposive studies, CDA facilitates the identification of language forms, metaphorical phrases, and media techniques that construct representations of CC within a specific text. CDA elucidates the manipulative dimensions of language through meta-messages and framing techniques, offering insight into the profound influence of language as a mechanism of persuasion and authority that shapes the context of discourse.

CDA has been selected to uncover hidden concepts and power dynamics inside the media by elucidating the fundamental beliefs. Due to the intricate nature of CC interaction, characterized by conflicting interpretations and opposing interests, CDA provides a methodological framework that transcends superficial examination to explore the socio-political ramifications of language usage. This study aims to investigate the media's coverage through CDA, focusing on its role in shaping public awareness of CC concerns and fostering active engagement with them.

Examination of Linguistic Techniques

Linguistic tools emerged as the pivotal element in crafting public awareness efforts on CC, employing precise language, analogies, and vocabulary as influential instruments for shaping readers' views on the issue. The utilization of phrases like "the imminent catastrophe," "the climatic war," and "the ecological apocalypse" frames the issue not merely as a future concern but as a present reality that confronts now. These metaphorical apocalyptic analogies serve to captivate the reader's interest and evoke profound feelings. The individual

can comprehend the urgency and sense of crisis. Examining such exigencies and employing terms like "climate resiliency" and "viable future" alongside these hazardous scenarios yields a narrative that, while acknowledging the gravity of the scenario, presents a chance for implementing efficient solutions. These language constructs delineate CC as beneficial and detrimental narratives, shaping public discourse by oscillating between dread, obligation, and community efforts to alleviate environmental degradation.

Examination of Rhetorical Techniques

Examining media and political narratives concerning CC reveals recurring gadgets, each possessing distinct significances and influencing public opinion in diverse manners. Emotional hearings, such as those invoking dread or compassion, underscore the urgency of addressing CC, with expressions like "there's no time to delay" and "all of humanity is close to the brink," conveying a sense of imminent peril. Rhetorical tropes such as representation, which portrays nature as an agency or a victim, expressly underscore the obligation to maintain the Earth as a safe and pristine environment. The phrase "Mother Earth weeps" serves as an analogy that evokes a sense of ethical responsibility and a summons to save the natural world.

Media texts frequently employ solutions-oriented language, promoting the adoption of alternative energy sources or conservation initiatives, thereby portraying CC as an issue with feasible resolutions. The media's utilization of these specific rhetorical strategies fulfills two functions. The primary objective is to raise public awareness of the gravity of

the climate catastrophe, while the secondary aim is to solicit individuals' support and active participation.

Understanding Language's Influence on Public Conversation

Systematically employing CDA in the discourse around CC implications in Pakistani newspapers redirects communication and enhances the creativity of this debate through linguistic innovation. The live experiment unequivocally demonstrates that language is inherently adaptable. Humans view climate catastrophes differently according to the terminology employed. An analysis of the linguistic constructs employed, such as emotional language, analogies, and rhetoric, reveals that CC discourse exhibits minimal variation across different countries. They prefer to communicate with all and engage with everyone. This relates to the everyday discourse in broader mainstream and empirical discussions regarding the importance of language in promoting positive engagement in combating environmental issues and fostering constructive dialogue.

Conclusion

The present research seeks to enhance comprehension of the manifestation and discursive construction of ecological narratives around CC within media and political narratives. The narrative depictions of CC narratives are evaluated and described using an EL paradigm and a methodology employed in the prior study. The study substantiates the notion that speech is not neutral; instead, it is infused with values that promote specific perspectives and actions, including the

advocacy for environmental conservation.

This research has discerned three categories of CC narratives within the corpora: Ecoactivist, Smart Growth Reformer, and Ecomodernist. The corpus consists of stories from a news site focused on environmental problems, and it does not include Lukewarmer narratives, as it posits that CC is not a crisis. This finding is plausible, as platforms advocating for ecological problems are less inclined to diminish the seriousness of CC.

The results of this investigation enhance previous research by assessing the efficacy of the EL paradigm. The structure and its components have facilitated a methodical analysis of the corpus. Both times exhibit a substantial dispersion of philosophy, building, belief, and salience factors in narratives concerning CC. The assessment and identity patterns are constrained, and aspects of metaphor and erasure are infrequent. In each designated year, various and opposing perspectives on CC arise, while some points of consensus persist. There is a consensus on preserving nature, critiquing governmental negligence in environmental responsibility, and endorsing policy reforms and technical advancements that serve societal interests.

This research provides additional insights into examining news as narratives and how communities view and interact with the environment. Analyzing these EL stories provides a profound comprehension of various viewpoints on environmental concerns, facilitating enduring cross-cultural

discussion and cooperation. This study reveals multiple avenues for additional research, providing potential for further inquiry and refining conclusions.

The present study intentionally restricts corpus size to examine EL tendencies across specific periods, facilitating the exploration of the identified topic. Future studies should aim to increase the corpus size to include a more extensive array of analyses, thereby enhancing the knowledge of EL trends across many situations. By balancing focused study with a larger corpus, future studies can improve the understanding in this domain and illuminate the broader ramifications of climate goals and legislation on language usage.

More excellent investigation in this domain would enhance the accessibility of environmental issues, such as global warming, to the general public, maybe by analyzing the influence of language on ecological legislation. Considering this paper's inclination toward pro-environmental reports, it might be intriguing for future ecological language studies to explore stories that primarily facilitate environmental degradation instead of media and political narratives.

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