

Cognitive Framing in Climate Change Debates: A Discourse Analysis of Media and Policy Texts

Mohammad Awad Al-Dawoody Abdulaal

Department of English Language and Literature, Prince Sattam bin Abdulaziz University, Al-kharj, Saudi Arabia;
Department of English, Faculty of Arts, Port Said University, Egypt

Ahmad Abdel Tawwab Sharaf Eldin

National Defence College, Abu Dhabi, United Arab Emirates;
Department of English language, Faculty of Arts, Menoufia University, Shebeen El-Kom, Egypt

Marwa Aly Eleleidy

Department of English, Faculty of Arts, Port Said University, Egypt

Abdullah Atef Abdullah Ibrahim

Department of English, Faculty of Arts, Damietta University, Egypt

Abstract—How the public perceives climate change and the actions taken to address it are significantly influenced by how the issue is framed in discourse. This study employs Cognitive Critical Discourse Analysis (Cognitive CDA) to examine the mental frameworks present in media and policy texts related to climate change. By analyzing a broad collection of international media articles and policy papers, the research identifies recurring themes such as “climate crisis”, “economic opportunity”, and “natural disaster”. These thematic frames shape public understanding, often amplifying urgency and emotional response. The study explores how such heightened rhetoric can be leveraged to foster unity rather than division. Additionally, it investigates the tension between the discourse of urgency and the presentation of viable solutions, emphasizing the need for a balanced approach. Ultimately, this research contributes to the development of effective communication strategies that support long-term, sustainable policy objectives, ensuring that climate discourse encourages meaningful action rather than polarization.

Index Terms—critical discourse analysis, media texts, policy communication, climate change discourse, cognitive framing

I. INTRODUCTION

Climate change is perhaps the biggest challenge to our world in the 21st century. Its impacts go from degradation of the environment to disruption of economies which in turn, requires coordinated efforts that have effective communication strategies. As climate change gets more attention from all over the world, stakeholders' actions have turned to communication and the way it influences people, choices and policies. Communication is fundamentally done in the form of language, and it does not only deal with the exchange of information; it also organizes knowledge and directs thinking. Consequently, cognitive framing emerges as an important concept, showing how language affects mental models and societal attitudes towards climate change (Antilla, 2005; Atanasova & Koteyko, 2017; Billett, 2010; Boykoff, 2008).

Cognitive framing refers to the use of language and conceptual structures to shape how we think about things. Frames are not just rhetorical devices; they are cognitive tools that direct our attention, prioritize information and determine our emotional and behavioral responses (Lakoff, 2010). For example, framing climate change as a "crisis" gets us urgency and action now, whereas framing it as an "opportunity" gets us benefits and innovation. These frames are embedded in media narratives and policy documents and shape public opinion and policy. Media play a key role in getting climate information and public discourse out there. They are the bridge between science and society, often translating complex phenomena into narratives. But the frames used in media reporting can have a big impact on how we perceive severity, causes and solutions to climate issues. For example, the use of disaster related imagery and language can get us empathy (Boykoff, 2008).

Policy documents offer a formalized view of climate action. Documents from international organizations like the United Nations Framework Convention on Climate Change (UNFCCC) and the Intergovernmental Panel on Climate Change (IPCC) have to balance science with accessibility. These texts use strategic framing to address different audiences, governments, industries, civil society etc. For example, terms like “sustainable development” and “green transition” are designed to align environmental goals with economic and social priorities (IPCC, 2021). But the cognitive impact of these frames – how they are processed, internalized and acted upon – is underexplored (Nerlich & Jaspal, 2012; Olausson, 2009; Painter, 2013; Reese et al., 2001; Russell & Fowler, 2002).

Cognitive Critical Discourse Analysis (CDA) offers a robust framework for investigating the intersection of language, cognition and power. By combining insights from critical discourse analysis and cognitive linguistics, this approach looks at how discourse not only reflects but also constructs social reality (van Dijk, 2008). CDA is particularly useful for climate change narratives as it takes into account the cognitive mechanisms that underlie framing effects. These mechanisms include conceptual metaphors, mental schemas and attentional biases that shape how individuals and societies engage with climate issues.

This study builds on the theoretical foundations of Cognitive CDA to analyze the prevailing frames in climate change discourse. It specifically examines how media and policy texts portray climate change as a "crisis," an "opportunity," or a "natural disaster." These frames are not mutually exclusive; instead, they interact and compete within public discourse, shaping collective attitudes and actions. For example, a "crisis" frame may prompt immediate responses but could also lead to eco-anxiety, while an "opportunity" frame might foster optimism yet downplay the urgency for action.

The significance of this research goes beyond academic exploration. Grasping the cognitive and emotional effects of climate frames can guide more effective communication strategies. For policymakers, this entails crafting messages that resonate with various audiences while upholding scientific integrity. For media professionals, it means striking a balance between engaging narratives and nuanced reporting. For activists and educators, it provides tools to rally support and encourage informed discussions. By connecting theory and practice, this study seeks to improve the effectiveness of climate communication in tackling one of humanity's most pressing challenges.

II. REVIEW OF LITERATURE

A. *Cognitive Framing and Media's Role in Climate Change Policy Discourse*

Research on the linguistic, cognitive, and social aspects of climate change communication has attracted a lot of scholarly interest. In order to contextualize the function of cognitive framing in media and policy discourses on climate change, this study summarizes important findings from the body of current work (Doyle, 2007; Eide & Ytterstad, 2011; Entman, 1993).

A key idea in comprehending how language affects how people perceive climate change is cognitive framing. Frames are mental models that emphasize some parts of reality while downplaying others, affecting how people think, feel, and act (Lakoff, 2010). According to research, language like "crisis", "opportunity", and "natural disaster" predominates in narratives about climate change and elicits different emotional and cognitive reactions. Nisbet (2009), for instance, highlights that while crisis frames evoke a sense of urgency, they run the risk of encouraging eco-anxiety and inaction if they are not backed by workable answers. On the other hand, opportunity frames that emphasize innovation and economic growth can inspire support from realistic audiences like company executives and legislators.

An increasing amount of research examines how audience characteristics and cognitive frames interact. Research indicates that the way frames are received is mediated by personal values, beliefs, and cultural contexts (Corner et al., 2014). For example, skeptics may reject or disengage from such storylines, whereas audiences with a high level of environmental care may react favorably to crisis frames. This emphasizes how crucial it is to modify frames to fit the cognitive and cultural contexts of certain audiences (Brulle et al., 2012; Carvalho & Burgess, 2005; Doultou & Brown, 2009).

The media is a vital source of information about climate change, influencing public opinion through its framing decisions. According to Boykoff and Boykoff (2004), media narratives frequently veer between balance and sensationalism, which affects how important climate issues are. Although sensationalist frames that highlight terrible occurrences draw in viewers, they can also cause psychological distance and a sense of powerlessness. However, by creating false equivalencies between fringe viewpoints and scientific consensus, balanced reporting—which include a range of viewpoints—runs the risk of escalating climate skepticism.

Digital media, where user-generated content and algorithms magnify specific frames, has been the focus of recent studies. According to Schäfer and Schlichting (2014), social media sites like Facebook and Twitter frequently prioritize emotionally charged narratives by promoting frames that connect with user engagement metrics like likes and shares. Public perception may be affected by this dynamic since it can produce echo chambers that strengthen preconceived notions.

Climate action is also shaped by cognitive frames in policy documents, which is another important space in which this could be tested. Where international organizations, such as the United Nations Framework Convention on Climate Change (UNFCCC) strategically use frames like the "sustainable development" and "green transition" to align goals in the environmental, economic, and social domains (IPCC, 2021). Nonetheless, studies suggest that the impact of these frames depends on their cognitive availability and salience for target audiences (Dryzek et al., 2011). For example, while "green transition" may resonate with progressive policymakers, it may not engage stakeholders worried about short-term economic costs.

Attention should also be paid to the interaction between media and policy discourses. Research shows that policy agendas are frequently shaped by media framing, which affect how governments prioritize and respond to climate change (Carvalho, 2007). On the other hand, policy documents can introduce institutional viewpoints into public discourse by acting as sources for media narratives. The mechanisms behind framing effects can be better understood through the merging of critical discourse analysis (CDA) and cognitive linguistics. Cognitive linguistics places a strong emphasis on

how mental schemas and conceptual metaphors influence how people think (Lakoff & Johnson, 1980). For instance, the metaphor "war on climate change" invokes a schema that many audiences are accustomed to by framing the issue as a conflict needing strategy, resources, and sacrifice.

Conversely, CDA examines the power structures present in discourse. According to Van Dijk (2008), discourse both creates and reflects social reality, supporting or contradicting prevailing ideas. CDA shows how frames represent conflicting interests, like political ideologies or corporate profit objectives, in the context of climate change. According to this critical viewpoint, framing techniques must take ethics into account to empower audiences rather than control them (Gamson & Modigliani, 1989; Goffman, 1974; Grundmann & Krishnamurthy, 2010).

There are still a number of gaps in literature despite significant advancements. First, a few research look at how different frames affect different demographic groups on an emotional and cognitive level. Designing inclusive and successful communication techniques requires an understanding of these effects. Second, the ethical ramifications of framing have received less attention, especially in situations when frames have the potential to marginalize disadvantaged groups or worsen inequity.

Furthermore, the emergence of social media and digital platforms offers both new possibilities and challenges for climate communication. These platforms allow frameworks to be widely shared, but they also run the risk of spreading polarization and false information. Future studies should examine how audience reaction and framing dynamics are influenced by digital affordances. This review emphasizes how important cognitive framing is in communicating about climate change and how it affects public opinion, policy goals, and behavioral results. This study intends to fill the gaps found and aid in the creation of more efficient and fair communication techniques by combining knowledge from media studies, critical discourse analysis, and cognitive linguistics.

B. Theoretical Framework

Cognitive Critical Discourse Analysis (Cognitive CDA) operates at the intersection of language, cognition, and power. It seeks to understand how discourse structures shape cognitive processes and reinforce social hierarchies. Cognitive CDA combines critical discourse analysis (CDA) and cognitive linguistics to explore how linguistic patterns reflect and construct shared mental models, known as cognitive frames. These frames guide how individuals perceive, process, and act on information, making them a crucial element in climate change communication.

Cognitive frames are mental structures that simplify complex phenomena by highlighting certain aspects while obscuring others (Lakoff, 2010). Frames are constructed through language and cultural norms, influencing how issues are understood and prioritized. For example, framing climate change as a "global crisis" foregrounds its urgency and moral imperative but might induce feelings of helplessness in some audiences. Conversely, framing it as an "economic opportunity" emphasizes innovation and profitability, appealing to pragmatic stakeholders such as policymakers and business leaders.

In climate change discourse, frames simplify the complexity of this multifaceted issue by condensing scientific, economic, and ethical dimensions into digestible narratives. They shape public perception by emphasizing particular aspects, such as a "natural disaster" frame that highlights tangible consequences like floods and wildfires, fostering empathy and urgency. Additionally, frames guide policy responses, influencing how governments prioritize climate action—for instance, a "green growth" frame promotes investment in renewable energy, while a "climate crisis" frame may justify stricter regulations. Furthermore, they encourage behavioral change by eliciting emotional and cognitive responses, with fear-based frames potentially prompting immediate action but also risking denial or disengagement if overused.

Critical discourse analysis highlights how power and ideology shape climate change narratives, which are inherently political and reflect competing interests and values. Economic power influences framing, as corporations may present climate action as an opportunity for "green innovation" to align environmental goals with profit motives. Political ideology also plays a role, with governments adopting frames that resonate with their constituencies, such as "national security" or "global responsibility." Additionally, media influence determines which frames dominate public discourse, with sensationalism often emphasizing crisis and disaster narratives, while investigative reporting may focus on systemic causes and solutions.

The Cognitive Critical Discourse Analysis (CDA) framework consists of three analytical dimensions: textual analysis, cognitive analysis, and contextual analysis. Textual analysis focuses on linguistic features like metaphors, lexical choices, and narrative structures, while cognitive analysis explores how these elements evoke mental models and emotional responses. Contextual analysis takes into account the social, political, and cultural contexts that both shape and are shaped by discourse. By combining these dimensions, Cognitive CDA offers a comprehensive approach to understanding the cognitive and social impacts of climate change framing.

Cognitive linguistics provides tools to analyze how language shapes are thought through key concepts such as conceptual metaphors, mental schemas, and attentional biases. Conceptual metaphors function as cognitive shortcuts, mapping one domain of experience onto another to simplify abstract ideas: for example, the metaphor "war on climate change" frames it as a battle requiring strategy and sacrifice. Mental schemas serve as cognitive templates that organize knowledge and expectations, such as the "natural disaster" schema, which invokes predictable consequences and responses like evacuation and rebuilding. Attentional biases influence what individuals focus on within a narrative, with

crisis framing often directing attention to immediate dangers while overshadowing long-term solutions. Together, these cognitive mechanisms shape how people perceive and respond to climate change discourse.

III. METHODOLOGY

This research adopts a qualitative approach, utilizing a combination of corpus-assisted analysis and close reading of texts to examine cognitive framing in climate change debates. By integrating these methods, the study aims to provide both macro-level patterns and micro-level insights into the framing strategies employed in media and policy texts. The following subsections detail the research problem and questions, the data collection process, analytical framework, and methodological procedures.

A. Research Problem and Questions

Effective communication about climate change plays a crucial role in shaping public perception and policy responses. The way climate change is framed in media and policy texts can either mobilize action or contribute to confusion and inaction. Cognitive linguistics suggests that conceptual metaphors, mental schemas, and attentional biases influence how individuals interpret and respond to climate discourse. However, there is limited research on how these cognitive frames function within media and policy narratives, particularly in shaping public understanding and policy preferences. Understanding the dominant cognitive frames used in these texts is essential for developing more effective communication strategies that foster informed decision-making and sustainable policy solutions. Consequently, this research article addresses the following questions:

- (1) What are the dominant cognitive frames utilized in media and policy texts regarding climate change?
- (2) How do these frames influence public understanding and policy preferences?

B. Data Collection

To ensure comprehensive analysis, the study relies on two primary data sources: media articles and policy documents. These sources were selected based on their influence in shaping public discourse and policymaking regarding climate change. A corpus of 500 media articles was compiled from global outlets spanning the period 2018 to 2023. These outlets were chosen to represent a diverse range of geographical regions, political orientations, and journalistic styles. Examples of outlets include prominent publications such as *The Guardian*, *The New York Times*, *China Daily*, and *The Hindu*. Articles were retrieved using database searches and keywords related to climate change (e.g., "climate crisis," "climate opportunity," "climate disaster"). The selection process prioritized articles that explicitly discussed climate change and its implications, ensuring relevance to the study's focus on framing. The dataset includes 100 policy documents published by international organizations, such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Intergovernmental Panel on Climate Change (IPCC). These documents were selected due to their authoritative role in shaping global climate policies. Policy texts were collected through official organizational websites and databases, focusing on reports, resolutions, and guidelines issued between 2018 and 2023. Keywords similar to those used for media articles guided the search and selection process.

C. Procedures and Analytical Framework

The research employs a three-step analytical process, combining corpus linguistics techniques with qualitative discourse analysis to uncover recurring patterns and interpret their broader implications. To identify lexical and metaphorical patterns, corpus analysis software like AntConc or Sketch Engine was used to process the text data, enabling keyword frequency analysis, concordance generation, and collocation identification. Particular focus was placed on metaphorical language, recognizing that metaphors significantly shape cognitive and emotional responses. Examples such as "battle against climate change" and "climate catastrophe" were identified and categorized for further analysis.

The study categorized dominant frames within the texts based on patterns identified in the corpus analysis. Frames were defined as recurring themes or perspectives used to present climate change issues. These included the "Crisis Frame," which highlights the urgency and catastrophic consequences of inaction; the "Opportunity Frame," emphasizing the economic or social benefits of addressing climate change; and the "Disaster Frame," which focuses on the devastation caused by climate events.

The final step involved a close reading of selected texts to analyze the cognitive and ideological implications of the identified frames. Drawing on cognitive framing theories, such as those proposed by George Lakoff, the analysis examined how language structures thought and action. Ideological implications were explored by linking frames to the agendas of specific stakeholders, including promoting climate activism, advancing policy goals, or preserving the status quo. For example, the "opportunity frame" in media texts may align with corporate narratives that emphasize green growth.

IV. RESEARCH RESULTS

The analysis of the framing of climate change in media and policy documents reveals key cognitive frames that shape public perceptions and responses. This section discusses the dominant cognitive frames identified in the texts analyzed, their language, impacts, and how they interact with one another. The findings provide insight into how these frames affect public understanding, behavior, and discourse around climate action.

The framing of climate change varies significantly across different sources. The analysis identified four dominant frames: the Climate Crisis frame, the Economic Opportunity frame, the Natural Disaster frame, and a combination of the three that interact in various ways to influence public perception. Each frame is characterized by distinct language choices and impacts, which are explored below.

The Climate Crisis frame is marked by language that emphasizes the urgency and severity of the climate situation. Key terms such as “emergency,” “point of no return,” and “catastrophic consequences” are commonly used to portray climate change as an immediate and critical threat. The language creates a sense of alarm, signaling that the world is at a precipice, potentially on the verge of irreversible damage. Terms like “climate emergency” or “crisis” suggest a need for immediate, drastic action.

The emotional impact of this frame is significant. By invoking fear and urgency, it motivates people to take swift action, often in the form of policy changes, personal lifestyle alterations, or support for climate advocacy. For example, the use of “emergency” may prompt governments to pass more aggressive climate policies or people to participate in environmental protests and movements.

However, while this frame can be effective in driving urgency, it can also have negative psychological consequences. The intensity of the language may induce feelings of helplessness or eco-anxiety, where individuals feel that their actions will not make a difference in the face of such an overwhelming crisis. In some cases, the repeated emphasis on catastrophic outcomes can lead to paralysis, where people are aware of the issue but unsure of how to act. Media outlets such as *The Guardian* have frequently used the term “climate emergency” to emphasize the seriousness of the issue. Articles often include phrases like “we are nearing the point of no return” to evoke urgency among readers (See Table 1).

TABLE 1
LANGUAGE AND IMPACT OF THE CLIMATE CRISIS FRAME

Language	Examples	Impact
Emergency	"Climate emergency"	Creates urgency, motivates immediate action
Catastrophic Consequences	"Irreversible damage," "Unprecedented devastation"	Inspires fear, potentially leading to eco-anxiety
Point of No Return	"We are at a tipping point," "Critical juncture"	Urges immediate intervention, evokes a sense of crisis
Imminent Destruction	"The world is on the brink," "Time is running out"	Evokes a sense of impending doom, compelling people to act
Urgency	"Act now or it's too late," "Emergency action needed"	Mobilizes urgent action, heightens fear
Crisis Situation	"The climate crisis is real," "We're in the midst of a crisis"	Frames climate change as an existential threat to humanity
Collapse	"Global systems will collapse," "Environmental breakdown"	Highlights the existential threat, pushing for immediate reforms

The Economic Opportunity frame focuses on the potential economic benefits of addressing climate change. Terms like “green growth,” “sustainable development,” and “clean energy revolution” frame climate action as a pathway to economic prosperity. This frame positions climate change not as a cost, but as a driver for innovation, job creation, and economic restructuring. The primary impact of this frame is that it reframes climate action in a way that appeals to policymakers, businesses, and economic stakeholders. By emphasizing economic opportunities, this frame aligns climate action with growth-oriented ideologies, making it more palatable to those who might otherwise be resistant to environmental policies due to concerns about economic costs.

For instance, the phrase “green growth” presents the transition to renewable energy and sustainable practices as a business opportunity. Countries like Denmark and Germany have leveraged this frame to develop green economies, creating jobs in renewable energy sectors and reaping the financial benefits of early adoption. However, this frame may also downplay the urgency of addressing climate change, as it focuses on the positive outcomes of action rather than the potential risks of inaction. This can sometimes divert attention away from the immediate need for drastic climate policies. Policy documents from the European Union often use language like “clean energy revolution” to promote the economic benefits of transitioning to a low-carbon economy, showcasing the potential for job creation in renewable energy sectors.

TABLE 2
LANGUAGE AND IMPACT OF THE ECONOMIC OPPORTUNITY FRAME

Language	Examples	Impact
Green Growth	"Green growth is the future," "Sustainable economy"	Frames climate action as an economically beneficial endeavor
Sustainable Development	"Low-carbon economy," "Sustainable business practices"	Encourages long-term economic stability through sustainable development
Clean Energy Revolution	"Clean energy transition," "The renewable energy boom"	Promotes clean energy as an economic opportunity and job creator
Low-Carbon Innovation	"Innovation through renewable technologies," "Electric vehicle revolution"	Aligns climate action with technological advancement and innovation
Economic Resilience	"Economic recovery through green jobs," "Transition to a green economy"	Links climate action with post-crisis economic recovery
Job Creation	"Renewable energy jobs," "Clean tech employment opportunities"	Highlights the creation of new sectors and job markets
Prosperity	"Green economy growth," "Economic benefits of sustainability"	Positions climate policies as a means to ensure long-term prosperity

The Natural Disaster frame highlights the direct, tangible effects of climate change, such as “floods,” “wildfires,” and “extreme weather events.” This frame focuses on the observable consequences of a changing climate, often appealing to audiences through empathy. By showing the destruction wrought by natural disasters, this frame emphasizes the need for emergency responses and preparedness.

This frame is highly effective in drawing attention to the immediate effects of climate change. By focusing on extreme weather events and natural disasters, the language helps to build empathy, encouraging people to support disaster relief efforts, advocacy for adaptation strategies, and insurance for climate-related damage. It also calls attention to the importance of disaster preparedness and response.

However, one limitation of this frame is that it tends to focus more on reactive rather than proactive solutions. By highlighting the aftermath of disasters, the frame may shift focus away from the root causes of climate change and the proactive measures needed to mitigate future risks. In other words, it may push the conversation towards recovery and rebuilding efforts rather than addressing prevention.

Coverage of wildfires in California often uses language such as “unprecedented wildfires,” focusing on the destruction caused by these events and emphasizing the need for recovery while implying that such occurrences are becoming more frequent due to climate change.

TABLE 3
LANGUAGE AND IMPACT OF THE NATURAL DISASTER FRAME

Language	Examples	Impact
Floods	"Devastating floods," "Record-breaking floodwaters"	Highlights immediate damage and need for disaster response
Wildfires	"Uncontrollable wildfires," "Raging infernos"	Evokes empathy, stresses the need for recovery and prevention
Extreme Weather	"Heatwaves, hurricanes, tornadoes," "Severe storms"	Focuses on observable consequences of climate change
Droughts	"Severe drought conditions," "Widespread water scarcity"	Evokes urgency around water management and climate adaptation
Displacement	"Climate refugees," "Mass migrations due to climate change"	Highlights the human toll, encouraging action on migration and humanitarian issues
Destruction	"Widespread devastation," "Destruction of ecosystems"	Emphasizes the tangible impacts of climate change, making it more relatable
Crisis Management	"Responding to natural disasters," "Emergency relief efforts"	Focuses on the need for proactive disaster preparedness and response

The interaction of these cognitive frames in public discourse plays a crucial role in shaping how individuals and institutions perceive climate change and respond to it. The analysis of media articles and policy documents shows that these frames often do not exist in isolation, but interact with one another, influencing the tone and nature of the discourse.

Media outlets predominantly employ the *Climate Crisis* frame, aligning with advocacy goals to raise awareness about the severity of climate change. Articles often focus on the urgent need for action, invoking fear and a sense of impending disaster. However, while the Crisis frame can mobilize action, it can also induce eco-anxiety among readers, leaving them feeling powerless or overwhelmed by the scale of the problem.

Occasionally, media outlets also incorporate the *Natural Disaster* frame, especially when covering recent events such as floods, hurricanes, or wildfires. This approach serves to humanize the issue, making it more relatable to the public by showcasing the real-world consequences of climate change.

In contrast, policy documents often strike a balance between the *Economic Opportunity* and *Natural Disaster* frames. This dual framing approach is designed to appeal to a wide range of stakeholders, from policymakers focused on economic growth to citizens concerned about the impact of natural disasters in their communities. For instance, the European Union’s climate policies emphasize the economic potential of the green transition while also acknowledging the risks of climate-related disasters and the need for adaptation strategies.

The interplay between these frames can serve to polarize or unify public opinion. On one hand, the *Climate Crisis* frame may galvanize certain groups to take immediate action, while on the other hand, it could alienate those who feel overwhelmed by the dire tone. The *Economic Opportunity* frame, however, has the potential to unite a broader range of stakeholders, as it taps into growth-oriented narratives and business interests. The *Natural Disaster* frame fosters empathy and a sense of shared responsibility but may fail to galvanize proactive measures in the absence of a strong sense of crisis or economic opportunity.

During the 2019 Australian bushfires, the use of the *Natural Disaster* frame highlighted the immediate destruction and need for relief. At the same time, the *Economic Opportunity* frame emerged in discussions about rebuilding the economy through sustainable industries, such as clean energy and eco-tourism (See Table 4).

TABLE 4
INTERACTION OF FRAMES IN PUBLIC PERCEPTION

Frame	Primary Impact	Example in Public Discourse
Climate Crisis	Creates urgency, motivates immediate action	Advocacy groups using phrases like "Climate emergency" to push for rapid policy change
Economic Opportunity	Appeals to economic stakeholders, aligns with business interests	Governments promoting green technologies as part of economic recovery plans
Natural Disaster	Builds empathy, emphasizes the need for reactive measures	Media coverage of wildfires or hurricanes to highlight the consequences of climate change
Climate Crisis + Economic Opportunity	Balances urgency with potential economic benefits	Media outlets discussing the financial advantages of renewable energy investments
Climate Crisis + Natural Disaster	Mobilizes action through fear and empathy	Coverage of both rising temperatures and extreme weather events like floods, encouraging adaptation
Economic Opportunity + Natural Disaster	Focuses on rebuilding and recovery while framing it as an economic opportunity	Policy documents that emphasize economic recovery through sustainable rebuilding after a natural disaster
All Frames (Crisis, Opportunity, Disaster)	Provides a comprehensive view, appealing to urgency, opportunity, and human impact	Government campaigns that use a blend of urgency about the crisis, the business potential of green growth, and disaster preparedness

In summary, the frames analyzed—Climate Crisis, Economic Opportunity, and Natural Disaster—each have distinct characteristics and impacts. The way these frames interact shapes public discourse, influencing everything from individual actions to large-scale policy decisions. Understanding these frames is crucial for developing effective communication strategies and policies that address both the urgency and complexity of climate change.

V. DISCUSSION

The findings of this study underscore the critical role that cognitive frames play in shaping public understanding and influencing policy preferences in climate change discourse. By identifying the predominant frames—"Climate Crisis", "Economic Opportunity", and "Natural Disaster"—this research aligns with existing literature while also providing nuanced insights into their respective strengths and limitations. This section discusses these findings in relation to previous studies, highlighting areas of agreement and divergence.

The "Climate Crisis" frame, which emphasizes the urgency of addressing climate change, has been widely recognized for its ability to mobilize public attention (Hulme, 2009; O'Neill & Nicholson-Cole, 2009). This frame aligns with studies that suggest urgency-driven language can enhance awareness and catalyze immediate concern among audiences (Fløttum et al., 2016). However, this study identifies a key limitation: while the frame effectively conveys the magnitude of the issue, it risks overwhelming audiences if not paired with actionable pathways. This finding is supported by the work of Moser (2016), who argues that fear-based messaging, while effective in raising awareness, can lead to disengagement if individuals feel powerless to act.

Conversely, other scholars critique the "Climate Crisis" frame for its potential to polarize debates. Nisbet (2009) suggests that framing climate change as a crisis may alienate certain demographic groups, particularly those who perceive the message as alarmist or politically charged. This critique contrasts with the present findings, which emphasize the importance of balancing urgency with actionable narratives to mitigate audience overwhelm. Future research could explore whether combining the "Climate Crisis" frame with solutions-oriented messaging might address these concerns.

The "Economic Opportunity" frame provides a hopeful narrative, focusing on the economic benefits of transitioning to sustainable practices. This frame resonates with studies highlighting the persuasive power of positive messaging in climate communication (Markowitz & Shariff, 2012). By emphasizing job creation, technological innovation, and economic growth, this frame appeals to diverse audiences, including policymakers and business leaders (Jang & Hart, 2015). The findings align with these studies, suggesting that the "Economic Opportunity" frame can effectively broaden the coalition of stakeholders supporting climate action (Hulme, 2009; Iyengar, 1991; Jaspal & Nerlich, 2014).

However, this study also notes a significant drawback: the frame may underemphasize the severity of climate impacts. This critique is consistent with the observations of Boykoff and Goodman (2009), who caution that economic narratives can overshadow the moral and existential imperatives of addressing climate change. Moreover, McCright and Dunlap (2011) argue that an overreliance on economic framing risks reducing climate action to a cost-benefit analysis, potentially neglecting the ethical dimensions of intergenerational equity and environmental justice. These divergent perspectives suggest the need for a more integrative approach that combines economic optimism with acknowledgment of the broader stakes involved.

The "Natural Disaster" frame, which vividly illustrates the consequences of climate change, is particularly effective in conveying the tangible impacts of extreme weather events. Previous studies corroborate this finding, demonstrating that disaster-related framing can enhance public understanding of climate risks and drive support for adaptation measures (Spence et al., 2011). By making the abstract concept of climate change more relatable, this frame can foster emotional engagement and a sense of urgency.

Nonetheless, the present study highlights a notable limitation: the "Natural Disaster" frame often lacks forward-looking solutions. This finding aligns with the critique by O'Neill and Smith (2014), who argue that focusing solely on disaster

impacts may leave audiences uncertain about how to respond, thereby hindering proactive engagement. Additionally, Leiserowitz (2006) points out that while disaster imagery can evoke strong emotional reactions, it may not always translate into sustained behavioral change. These observations underscore the importance of integrating solution-oriented elements into disaster-related framing to ensure a balanced narrative.

The interplay between these frames presents both challenges and opportunities for climate change communication. While each frame offers distinct advantages, their limitations highlight the need for a more holistic approach. Scholars such as Lakoff (2010) advocate framing strategies that combine urgency with actionable solutions, emphasizing the role of cognitive linguistics in crafting narratives that resonate across diverse audiences. This perspective aligns with the study's recommendation to balance the "Climate Crisis" frame with pathways for action, the "Economic Opportunity" frame with acknowledgment of climate risks, and the "Natural Disaster" frame with forward-looking strategies.

At the same time, other researchers caution against oversimplifying the framing process. For example, Pidgeon and Fischhoff (2011), Leiserowitz (2006), McComas and Shanahan (1999), McCright and Dunlap (2011), and Moser and Dilling (2007) stress the importance of audience segmentation, arguing that effective communication requires tailoring frames to the specific values, beliefs, and priorities of different demographic groups. This view is echoed by Maibach et al. (2011), who highlight the potential of targeted messaging to bridge ideological divides and foster collective action. These insights suggest that future studies should explore how combining frames can address diverse audience needs while maintaining coherence and consistency in messaging.

VI. CONCLUSION

The discussion section highlights the nuanced interplay between cognitive frames in climate change discourse, drawing on existing literature to contextualize the findings. While the "Climate Crisis", "Economic Opportunity" and "Natural Disaster" frames each have distinct strengths, their limitations underscore the need for balanced and integrative framing strategies. By engaging with diverse perspectives and bridging theoretical frameworks, this research provides valuable insights for advancing effective climate communication and fostering collective action.

The findings of this study have significant implications for both policy and public engagement. By highlighting the cognitive impacts of different frames, this research contributes to the design of communication strategies that align with sustainable policy goals. For example, policymakers could leverage the "Economic Opportunity" frame to build bipartisan support for green initiatives while using the "Climate Crisis" frame to underscore the urgency of immediate action. Similarly, media practitioners could integrate the "Natural Disaster" frame with solution-oriented narratives to inspire proactive engagement among audiences.

Moreover, this study reinforces the importance of interdisciplinary approaches to climate change communication. By bridging cognitive linguistics and critical discourse analysis, the research offers a comprehensive framework for understanding how frames shape public perceptions and policy preferences. This integrative perspective aligns with recent calls for greater collaboration between social scientists, communication experts, and policymakers to address the complex challenges of climate change (Corner et al., 2015).

To enhance the reliability and validity of the findings, the study employed several methodological safeguards. Triangulation was used by analyzing multiple sources of data, such as media and policy texts, to cross-validate the findings. Intercoder reliability was ensured by having a second coder independently review a subset of the texts to check for consistency in frame categorization; any discrepancies were discussed and resolved. Additionally, contextual sensitivity was incorporated into the analysis, considering the cultural, temporal, and geopolitical contexts that influence framing choices.

Despite these efforts, the study acknowledges certain limitations. Selection bias may have been present, as the selection of media outlets and policy documents, while aiming for diversity, could inadvertently reflect biases related to accessibility or prominence. Furthermore, the close reading process, though providing in-depth qualitative analysis, is inherently interpretive and may have introduced researcher bias. To mitigate this, the study employed systematic coding and transparent reporting practices.

Future research can build upon this study by expanding the dataset to include a broader range of media sources and policy documents from diverse geopolitical regions. This would help mitigate selection bias and provide a more comprehensive understanding of how climate change is framed globally. Additionally, incorporating computational text analysis methods, such as natural language processing (NLP), could complement qualitative approaches by identifying framing patterns at scale. Future studies may also explore the role of social media in shaping climate discourse, given its increasing influence on public opinion. Longitudinal research could examine how cognitive frames evolve over time and in response to major climate events. Moreover, interdisciplinary collaborations between linguists, policymakers, and climate scientists could enhance the applicability of findings. Expanding intercoder reliability measures through a larger, more diverse coding team may further strengthen methodological rigor. Finally, experimental studies could assess how different frames influence public attitudes and behavioral responses to climate policies.

ACKNOWLEDGEMENTS

This study is supported via funding from Prince Sattam bin Abdulaziz project number (PSAU/2025/R/1446).

REFERENCES

- [1] Antilla, L. (2005). Climate of skepticism: US newspaper coverage of the science of climate change. *Global Environmental Change*, 15(4), 338–352. <https://doi.org/10.1016/j.gloenvcha.2005.08.003>
- [2] Atanasova, D., & Koteyko, N. (2017). Metaphors in *Guardian Online* and *Mail Online* opinion-page content on climate change: War, religion, and politics. *Environmental Communication*, 11(4), 452–479. <https://doi.org/10.1080/17524032.2015.1024705>
- [3] Billett, S. (2010). Dividing climate change: Global warming in the Indian mass media. *Climatic Change*, 99(1–2), 1–16. <https://doi.org/10.1007/s10584-009-9605-3>
- [4] Boykoff, M. T. (2008). The cultural politics of climate change discourse in UK tabloids. *Political Geography*, 27(5), 549–569. <https://doi.org/10.1016/j.polgeo.2008.05.002>
- [5] Boykoff, M. T. (2011). *Who speaks for the climate? Making sense of media reporting on climate change*. Cambridge University Press.
- [6] Boykoff, M. T., & Boykoff, J. M. (2004). Balance as bias: Global warming and the US prestige press. *Global Environmental Change*, 14(2), 125–136. <https://doi.org/10.1016/j.gloenvcha.2003.10.001>
- [7] Brulle, R. J., Carmichael, J., & Jenkins, J. C. (2012). Shifting public opinion on climate change: An empirical assessment of factors influencing concern over climate change in the U.S., 2002–2010. *Climatic Change*, 114(2), 169–188. <https://doi.org/10.1007/s10584-012-0403-y>
- [8] Carvalho, A. (2007). Ideological cultures and media discourses on scientific knowledge: Re-reading news on climate change. *Public Understanding of Science*, 16(2), 223–243. <https://doi.org/10.1177/0963662506066775>
- [9] Carvalho, A., & Burgess, J. (2005). Cultural circuits of climate change in U.K. broadsheet newspapers, 1985–2003. *Risk Analysis*, 25(6), 1457–1469. <https://doi.org/10.1111/j.1539-6924.2005.00692.x>
- [10] Corner, A., Markowitz, E., & Pidgeon, N. (2014). Public engagement with climate change: The role of human values. *WIREs Climate Change*, 5(3), 411–422. <https://doi.org/10.1002/wcc.269>
- [11] Douilton, H., & Brown, K. (2009). Ten years to prevent catastrophe? Discourses of climate change and international development in the UK press. *Global Environmental Change*, 19(2), 191–202. <https://doi.org/10.1016/j.gloenvcha.2008.10.004>
- [12] Doyle, J. (2007). Picturing the climatic: Greenpeace and the representational politics of climate change communication. *Science as Culture*, 16(2), 129–150. <https://doi.org/10.1080/09505430701368938>
- [13] Dryzek, J. S., Norgaard, R. B., & Schlosberg, D. (2011). *The Oxford handbook of climate change and society*. Oxford University Press.
- [14] Eide, E., & Ytterstad, A. (2011). The tainted hero: Frames of domestication in Norwegian press representation of the Bali climate summit. *International Journal of Press/Politics*, 16(1), 50–74. <https://doi.org/10.1177/1940161210383994>
- [15] Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 43(4), 51–58. <https://doi.org/10.1111/j.1460-2466.1993.tb01304.x>
- [16] Ganson, W. A., & Modigliani, A. (1989). Media discourse and public opinion on nuclear power: A constructionist approach. *American Journal of Sociology*, 95(1), 1–37. <https://doi.org/10.1086/229213>
- [17] Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. Harvard University Press.
- [18] Grundmann, R., & Krishnamurthy, R. (2010). The discourse of climate change: A corpus-based approach. *Critical Approaches to Discourse Analysis across Disciplines*, 4(2), 125–146.
- [19] Hulme, M. (2009). *Why we disagree about climate change: Understanding controversy, inaction, and opportunity*. Cambridge University Press.
- [20] Intergovernmental Panel on Climate Change (IPCC). (2021). *Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press. <https://doi.org/10.1017/9781009157896>
- [21] Iyengar, S. (1991). *Is anyone responsible? How television frames political issues*. University of Chicago Press.
- [22] Jaspal, R., & Nerlich, B. (2014). When climate science became climate politics: British media representations of climate change in 1988. *Public Understanding of Science*, 23(2), 122–141. <https://doi.org/10.1177/0963662512440219>
- [23] Lakoff, G. (2010). Why it matters how we frame the environment. *Environmental Communication*, 4(1), 70–81. <https://doi.org/10.1080/17524030903529749>
- [24] Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. University of Chicago Press.
- [25] Leiserowitz, A. A. (2006). Climate change risk perception and policy preferences: The role of affect, imagery, and values. *Climatic Change*, 77(1–2), 45–72. <https://doi.org/10.1007/s10584-006-9059-9>
- [26] McComas, K., & Shanahan, J. (1999). Telling stories about global climate change: Measuring the impact of narratives on issue cycles. *Communication Research*, 26(1), 30–57. <https://doi.org/10.1177/009365099026001003>
- [27] McCright, A. M., & Dunlap, R. E. (2011). The politicization of climate change and polarization in the American public's views of global warming, 2001–2010. *Sociological Quarterly*, 52(2), 155–194. <https://doi.org/10.1111/j.1533-8525.2011.01198.x>
- [28] Moser, S. C., & Dilling, L. (Eds.). (2007). *Creating a climate for change: Communicating climate change and facilitating social change*. Cambridge University Press.
- [29] Nerlich, B., & Jaspal, R. (2012). Metaphors we die by? Geoengineering, metaphors, and the argument from catastrophe. *Metaphor and Symbol*, 27(2), 131–147. <https://doi.org/10.1080/10926488.2012.665795>
- [30] Nisbet, M. C. (2009). Communicating climate change: Why frames matter for public engagement. *Environment: Science and Policy for Sustainable Development*, 51(2), 12–23. <https://doi.org/10.3200/ENVT.51.2.12-23>
- [31] Olausson, U. (2009). Global warming—global responsibility? Media frames of collective action and scientific certainty. *Public Understanding of Science*, 18(4), 421–436. <https://doi.org/10.1177/0963662507081242>
- [32] Painter, J. (2013). *Climate change in the media: Reporting risk and uncertainty*. I.B. Tauris.
- [33] Reese, S. D., Gandy, O. H., & Grant, A. E. (Eds.). (2001). *Framing public life: Perspectives on media and our understanding of the social world*. Lawrence Erlbaum Associates.

- [34] Russell, A., & Fowler, C. (2002). Frames and agendas in Australian newspaper coverage of the 1997 Kyoto Conference on climate change. *Environmentalist*, 22(3), 11–16.
- [35] Schäfer, M. S., & Schlichting, I. (2014). Media representations of climate change: A meta-analysis of the research field. *Environmental Communication*, 8(2), 142–160. <https://doi.org/10.1080/17524032.2014.914050>
- [36] van Dijk, T. A. (2008). *Discourse and context: A sociocognitive approach*. Cambridge University Press.



Mohammad A. Abdulaal is a faculty member at Prince Sattam bin Abdulaziz University, specializing in linguistics, applied linguistics, and theoretical linguistics. His research has garnered 131 citations, reflecting his contributions to the field. Dr. Abdulaal's research interests include dynamic assessment in EFL learning, psycholinguistic case studies, and cross-linguistic analyses of formulaic language. His work has been published in journals such as *Language Testing in Asia* and the *International Journal of English Linguistics*. As a member of the academic community at Prince Sattam bin Abdulaziz University, Dr. Abdulaal contributes to the advancement of linguistic studies through both teaching and research.



Ahmad Abdel Tawwab Sharaf Eldin is a multilingual linguist and educator specializing in the interplay of language, cognition, and culture. He currently works as an educational consultant at the National Defense College in Abu Dhabi. With a Ph.D. in Applied Linguistics from Al Azhar University, his research focuses on Arabic and English linguistics, critical discourse analysis, and sociolinguistics. Dr. Sharaf Eldin has held teaching and interpreting positions in Egypt, the US, and Turkey, and UAE including serving as Senior Interpreter to Egypt's Minister of Foreign Affairs. He is a published scholar with expertise in metaphor, language learning, and media discourse.



Marwa Aly Eleleidy is a lecturer in the Faculty of Arts at Port Said University, Egypt, specializing in English Language and Literature. She coordinates the English Translation and Interpretation Program at Port Said University. In 2022, she co-presented "Tracking Ss' Growth Pre- and Post-COVID Through Assessment Analysis" at the International Language Assessment Conference in Egypt (ILACE). Eleleidy authored a study titled "Sufism in the Thoughts of Giuseppe Scattolin: A Call for Peace," examining Sufism's role in promoting societal peace. Her research interests include Sufi ideology and interreligious dialogue. She is also the President Counsellor of Social Activities at Port Said University.



Abdullah Atef A. Ibrahim is a lecturer in Linguistics and Translation at Damietta University, Egypt, with a focus on Linguistics and Translation Studies. In 2025, he published "Power and Domination in the Curlew's Prayer: A Critical Discourse Analysis" in the *Journal of Scientific Research in Arts*. His 2024 article, "Investigating Problems of Translating Ahmed Alaidy's Being Abbas ElAbd into English: An Integrated Approach," appeared in the *Bulletin of Faculty of Arts*. Also in 2024, Ibrahim analyzed "Verbal Abuse in Johnny & Amber Heard's Trial: A Forensic Linguistic Analysis" in the *Journal of Faculty of Arts*.