

**A Comparative Analysis of How Pakistani and American Print Media Construct
Environmental Disaster Through Systemic Functional Linguistics**

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ABSTRACT

This study investigates the way how Pakistani and American newspapers construct fundamentally different realities of the 2022 Pakistan floods through grammatical choices. The analysis is carried out by utilizing the well-known Systemic Functional Grammar. The study analyzed almost 327 clauses from two representative texts. One from Pakistan's newspaper 'Express Tribune' and the other one from America's newspaper 'Wall Street Journal'. The research unveils certain crucial patterns in how linguistic tactics and resources actively shape the understanding of climate vulnerability, agency, and also the responsibility. On one hand, the text taken from Pakistani newspaper predominantly uses the relational and mental processes (62.7%), constructing floods as the problems which require democratic accountability and systemic analysis. On the other hand, the American newspaper text privileges the material processes (48.3%) which as a result position natural forces as autonomous agents acting upon the helpless peoples. On the basis of the systematic analysis of transitivity patterns, modality distributions, and thematic structures, the study shows how these grammatical choices generate what Halliday calls as "metafunctional harmony" which refers to the so-called coherent but contrasting worldviews about climate disaster. From one perspective, the interrogative mood, inclusive pronouns, and abstract themes in the Pakistani texts produce participatory discourse that positions readers as agents of change. From the other perspective, the American text's declarative mood, distancing pronouns, and concrete themes produce narrative immediacy that may generate sympathy but potentially obscures the systemic causation. These findings disclose the idea that the climate vulnerability is not merely just materially experienced, but they are also grammatically constructed and with profound implications for international climate cooperation and justice for the affected ones. This analysis contributes methodologically by developing a thematic grouping approach that reveals how grammatical patterns cluster meaningfully around different semantic domains.

Keywords: Systemic Functional Grammar, climate discourse, media framing, Pakistan floods, transitivity analysis, critical discourse analysis

INTRODUCTION

Between the time period of June and October 2022, Pakistan went through catastrophic flooding that consequently affected over 33 million people which is 15% of the nation's population across the 110 of 154 districts, resulting in total of 1,739 casualties, 12,867 injuries, and the calculated destruction of 2.2 million homes (OCHA, 2022). The economic loss to the country ultimately reached \$30 billion in combined damages and losses which equivalent to 10% of Pakistan's GDP, while the nation's contribution to global greenhouse gas emissions remains below 1% (World Bank, 2022). Yet beyond these quantifiable impacts of the calamity lies a more fundamental question: how do different media systems linguistically construct this same material reality? This study uses Michael Halliday's (1985) Systemic Functional Grammar in order to analyze how one Pakistani and one American newspaper article deploy distinct transitivity patterns, mood choices, and thematic structures to create fundamentally different representations of the 2022 floods in the print media. The systematic grammatical analysis reveals that these are not stylistic variations but ideologically motivated linguistic choices that construct competing realities. On the one hand, Pakistani text emphasizing human agency and governmental failure through material processes with human actors, while, on the other hand, American text is seen to naturalize disaster through material processes with environmental actors which as a result obscures questions of responsibility and justice to the flood victims. The theoretical foundation of this study rests upon the view of Halliday (1985) which is language as a social semiotic system, where grammatical choices realize semantic options that construct social reality, a concept illustrated by the Pakistani text's use of agency (e.g., 'The government has dithered' [Mir, 2022]) versus the American text's agent-deleted passive construction ('The town...was flooded suddenly' [Shah, 2022])

The research gaps addressed in this investigation emerge from the three intersecting limitations in current scholarship. First, while SFG has been extensively applied to the environmental discourse within single linguistic contexts (Goatly, 2002; Stibbe, 2015; Poole, 2022), comparative analysis across culturally distinct media systems remains underdeveloped and unexplored. Second, the existing climate communication research clearly and predominantly employs the content analysis or the frame analysis (Painter, 2013; Schäfer & Schlichting, 2014), which lack the grammatical precision in order to reveal how the specific linguistic choices construct the ideological positions. Third, the Global South perspectives on climate disasters are obviously underrepresented in the vast literature of discourse analysis, with most studies focusing on the Western media (Schmidt et al., 2013). This study addresses these gaps by conducting detailed transitivity analysis of the Pakistani and American newspaper coverage which reveals how grammatical patterns encode different relationships between human agency, natural forces, and institutional responsibility.

LITERATURE REVIEW

The 2022 Pakistan floods which affected over 33 million people and submerged one-third of the nation, represent not merely a natural disaster but also a critical moment in the global climate discourse that demands examination of the way different media systems construct meaning around the different environmental catastrophes. While the extensive scholarly attention has focused on what the media claims about the climate disasters, comparatively, very far less attention has been given to how they say and report it, which is the specific grammatical mechanisms through which different societies with distinct cultural contexts construct fundamentally polar different realities of the same material events taking place around the globe. This literature review delves deep into the examination of the existing research that has been already conducted at the intersection of the climate disaster coverage, linguistic analysis, and cross-cultural media studies in order to establish the theoretical and also empirical foundations for a systematic

grammatical analysis of how the Pakistani and the American newspapers construct the 2022 floods of Pakistan.

Systemic Functional Grammar in Media Discourse Analysis

Michael Halliday's Systemic Functional Grammar has proven itself particularly valuable for analyzing the media discourse, but the applications of SFG to climate disaster coverage remains limited in the scholarly realm. Halliday and Matthiessen (2014) are known to establish the theoretical foundation for the understanding of how the grammatical choices construct ideological positions which demonstrate that the transitivity patterns actually reveal the worldviews by encoding that who acts upon whom under what circumstances. Their framework enables systematic analysis of how different grammatical configurations construct different versions of reality which move beyond the surface content to examine the underlying meaning-making mechanisms.

Van Leeuwen (2008) is the one who developed the concept known as "grammatical agency" while analyzing how the social actors are represented in discourse which demonstrate that the same events can be construed and portrayed through different participant-process configurations in order to distribute the responsibility differently. Leeuwen's framework for analyzing "recontextualization" is seen as capable of demonstrating the way how grammatical transformation comes along the movement of discourse across different contexts. Moreover, he did not specifically examine the coverage of climate disaster. In addition, Van Leeuwen's work establishes theoretical foundations for understanding the way how language tactics and vitally grammatical choices in media discourse are able to construct the social relations and power dynamics in news reports.

Richardson (2007) in his work entitled "Analysing Newspapers: An Approach from Critical Discourse Analysis" with the aim to examine how grammatical patterns naturalize ideology in news discourse integrated Halliday's SFG with Fairclough's CDA. The analysis of transitivity he conducted in conflict reporting was able to reveal that the systematic patterns where state actors appear as 'Actors' in positive processes while the protesters who stand for justice appear as 'Actors' in the negative processes which clearly demonstrate the way how grammar constructs legitimacy with the intentional use of linguistic choices. The methodology of Richardson provides a model for connecting the micro-level grammatical analysis to the macro-level ideological critique. In addition, Richardson did not examine environmental or climate coverage.

In the most recent time, Goatly (2017) in his work known as "The Language of Metaphors," applied SFG to environmental discourse where he analyzed the way how grammatical metaphor in news reports supports human agency in environmental destruction. His study was able to reveal that nominalization, which is transforming processes into things, systematically obscures causation in the reporting of environmental events. They turn "corporations destroy forests" into "deforestation occurs" constructing an entirely false representation. This grammatical transformation removes the active responsible agents and constructs environmental damage as a part of natural process rather than connecting it to the actions of humans which demonstrate the way how grammar shapes environmental understanding.

Pakistani Media Discourse and Democratic Theory

Pakistani media discourse has received increasing scholarly attention, particularly regarding its relationship to democratic development. Rahman (2004) followed the development of English-language media in Pakistan and revealed how the media is a space of elite discourse construction and a complicated place of interaction with vernacular media. In his analysis of history Pakistani English media, he finds

that discursive conventions of the media have emerged in which the South Asian narrative traditions are combined with Anglo-American journalistic conventions to produce hybrid forms that should be viewed as students of systematic grammatical analysis.

In their analyzes, Mezzera and Sial (2010) investigated the role of Pakistani media in democratic consolidation and established that the preparedness to disaster and effective response are associated with press freedom. Their analysis of the 2005 Kashmir earthquake revealed that regions in which the local media was greater had fewer victims and received more timely relief, which confirms the thesis of Sen regarding democracy and prevention of disasters. But, they analyzed it in terms of institutional aspects and did not study the linguistic construction of disasters and democratic responsibility through media.

In his article *Floods of Fury*, Yusuf (2013) examined Pakistani news about the natural disasters, focusing on how the newspapers establish a connection between climate change, governance, and vulnerability. Her critical discourse analysis showed that Pakistani media had the tendency to associate disasters with government failures as opposed to natural ones but she mainly analyzed thematic content as opposed to grammatical actualization. The fact that Yusuf has identified a frame of a democratic deficit when discussing the Pakistani disaster coverage, implies that grammatical analysis may be able to determine how the political criticism is put together linguistically.

The conceptual links between democracy and disaster communication is much reliant on Sen (1999) article titled *Development as Freedom* in which Sen postulates that famine can be avoided and the effects of disasters are minimized through democratic organizations and free media. The thesis put forward by Sen has been widely testable using quantitative analysis but has seldom been investigated using discourse analysis that would help us understand the linguistic way in which the media creates the democracy disaster relationship. Drèze and Sen (2013) applied this argument to South Asia and said that democratic deepening needed media that make its citizens producers and not consumers, however they stated they did not look at the grammatical processes by which such production takes place.

Research Gaps and Study Positioning

This study has a number of significant gaps in the literature. First, much research has been conducted on media framing of climate disasters, but grammatical analysis on SFG is few. Patterns of representation are identified but studies do not look at the mechanisms within the grammar which the pattern is realized. Second, cross-cultural comparisons of climate disaster reporting are usually based on the content and not on grammatical form and fail to note how various linguistic options produce radically different versions of reality. Third, the connection between the discourse of democracy and the discourse of disaster covering cannot be systematically analyzed grammatically, thus the connection between the two is linguistically built in a non-systematic manner.

This paper fills in such gaps by treating Pakistani and American reporting on the 2022 floods through the broader lens of SFG analysis, showing how grammatically constructed ideological stances on agency, responsibility, and vulnerability are made through transitivity, mood/modality, and theme systems of the English language. The analysis shows that the construction of floods by the Pakistani media as democratic failure using relational processes and deliberative mood is in contrast to natural catastrophe construction by the American media using material processes and declarative mood. This grammatical split shows that various societies utilize linguistic resources to construct cultural specific conceptions of climate disasters with consequences on global climate communication and policy language.

RESEARCH METHODOLOGY

Research Design

The research design is the qualitative comparative discourse analysis design based on the Systemic Functional Grammar by Halliday to analyze how the 2022 Pakistan floods are linguistically constructed by Pakistani and American newspapers. The study methodically examines the manner in which the various media systems utilize grammatical resources in three metafunctions of ideational, interpersonal and textual to produce culturally inequitable depiction of the same environmental catastrophe. Based on the construction of Matthiessen (2014) on the cross-cultural grammatical comparison, the design allows analyzing the aggregation of transitivity patterns, the selection of mood and modality, and the form of thematic organization into the formation of various versions of reality, thus exposing not differences in the styles but the complete discrepancies between the conceptualizations of agency, responsibility, and human-environment relationships in climate disaster discourse.

Data Collection and Selection

The corpus comprised two purposively chosen newspaper articles that reflect the Pakistani and American media discourse at the critical early time of the 2022 flood coverage. The inclusion criteria were biased towards those information rich texts that shed some light on opposing patterns of grammar, but were not specific enough to be comparatively generic. The initial article, which is titled Floods, the press and democracy by Dr. Ali M. Mir, was published in the Express Tribune of Pakistan on the 12th of September 2022. Express Tribune, the second largest English language newspaper in Pakistan, which is read by educated urban population in Pakistan, is a mainstream Pakistani discourse though it is not controlled by the editorial board. Dr. The article by Mir with its combination of the democratic theory proposed by Amartya Sen and analysis of floods offers grammatical complexity with the combination of theoretical argumentation and disaster commentary, and offers 155 ranking clauses as the result of the analysis.

The second article is titled In Southern Pakistan, a Sea Made of Monsoon Waters Swallows Villages, and it was written by Saeed Shah in The Wall Street Journal on September 6, 2022. The Wall Street Journal as a global power with influence on the debate on international policies, influences elite American perception of crises around the globe. The reporting by Shah is a combination of eyewitness accounts and scientific explanation and it provides rich patterns of transitivity on how American media constructs the environmental disaster to international viewers, thus, offering 168 ranking patterns to analyze.

Analytical Framework

The analysis grammatically implements three interrelated systems out of the Systemic Functional Grammar that relate to the three metafunctions of Halliday. The ideational metafunction which is studied using the transitivity systems is the study of experience being constructed in terms of processes, participants and circumstances. The interpersonal metafunction that is studied using the mood and modality systems demonstrates how social relations and epistemic standpoints are performed. The textual metafunction which was explored using the theme-rheme structures illustrates how organization of information produces coherent messages giving priority to some interpretations.

Coding Procedures

The process of coding is completed in terms of five systematic passes that cover all the aspects of the SFG system. The former initial step detects the types of processes with diagnostic tests, the borderline

cases being handled following the criteria of Halliday and Matthiassen (2014). Such processes as "continue" are contextually classified in terms of construing dynamic unfolding (material) or static persistence (relational). The second pass categorizes participants by process-specific roles, which follow the distribution of entities between Actor, Goal roles in texts and exposes agency distributions. The third pass encodes situations, which document their nature and roles in building spatiotemporal and causal contexts.

Data Analysis Procedures

Interpretation relates grammatical structures to ideological meanings, based on critical discourse analysis, with the systematicity of SFG. Agency patterns of material processes display the assumptions of agency capacity and vulnerability. The use of voice distributions differentiates agentic actions and agentless occurrences. Patterns of modality reveal assertions of authority, as well as, positions of certainty. Theme selections expose information prioritization and backgrounding strategies. The analysis demonstrates how grammatical choices aggregate to construct coherent but contrasting worldviews about climate disaster.

Validity and Limitations

Limitations include focus on two articles from September 2022, capturing specific coverage moments without tracking temporal evolution. English-language focus excludes vernacular media potentially employing different grammatical strategies for different audiences. Textual analysis lacks audience reception data revealing reader interpretation of grammatical constructions. The single-coder design, while implementing reliability checks, cannot eliminate subjective interpretation entirely.

FINDINGS AND DISCUSSION

Overview of Grammatical Patterns

This investigation uses Systemic Functional Grammar framework proposed by Michael Halliday in order to explore how Pakistani and American print media constructs the 2022 Pakistan floods through the use of distinct grammatical tactics. The thematic grouping approach of the methodology was carefully followed. The clauses were clustered into four different analytical sections: 1) natural forces and environmental agency, 2) human experience and response, 3) institutional and governmental response, and 4) knowledge and communication patterns. The organizational structure that is well adhered to in the methodology displays the manner in which the grammatical resources merge together to form systematically varied editions of the environmental disaster.

The quantitative analysis made at first indicates that there are certain important distributional variations between the two texts. On the one hand, as it is depicted in Table 1, the Pakistani text is dominated by such processes as relational (38.5 percent) and mental (24.2 percent) whereas, on the other hand, the American text is dominated by material processes (48.3 percent) and existential processes (12.6 percent). These tendencies introduce fundamentally alternative conceptualizations of the environmental catastrophe. On the one hand, the Pakistani discourse shapes the floods as a state that is in need of comprehension and democratic reaction. The American discourse, on the other hand, puts much stress on physical actions and environmental forces as independent actors.

Table 1: Overall Process Type Distribution

Process Type	Pakistani Text		American Text	
	Count	%	Count	%
Material	35	15	14	2
Mental	23.0	8.6	9.2	1.2
Relational	84	59	18	5
Verbal	48.3	38.5	10.3	3.3
Behavioral	37	42	3	13
Existential	24.2	24.1	2.0	7.5
Total	153	100%	174	100%

This investigation which is the transitivity analysis shows the central aspect of this enquiry that these distributional differences are not only mere stylistic variations, but they also show underlying ideological inclinations towards the environmental calamities. The focus of the Pakistani text on relational and mental process builds a platform around which the description of the systemic failures and the creation of the accountability of the democratization process is given more importance than the physical destruction. Quite on the contrary, the material process dominance of the American text creates a narrative of unavoidable forces of nature which operates on powerless victims. It may obscure the issues of political accountability and climate justice, although.

These trends occur in the interpersonal and textual metafunctions. It builds what Halliday refers to as as metafunctional harmony that is a coherent view of the world built by mutually reinforcing grammatical choices and tactics. The analysis that follows considers each metafunction individually and still preserves the focus on their synthesis in the development of the disaster discourses that are culturally specific.

Ideational Metafunction: Constructing Experience Through Transitivity

Analysis of the ideation shows how the grammatical decisions create radically alternative experiential worlds of the same catastrophe. By methodically analyzing the types of processes, participant roles, and circumstantial factors through our four thematic categories, there are patterns created which replicate and support cultural interpretations of human-environment relations, agency and vulnerability.

Thematic Group 1: Natural Forces and Environmental Agency

The most vivid grammatical divergence in texts is shown in the construction of natural forces. Throughout the American text the floods and monsoons are all placed as Actors in material processes of destruction, with verbs which stress the overwhelming force: "swallows" (title), "flooded suddenly" (line 15), "washed away" (lines 47, 82), and dissolved (line 125). This grammatical structure creates nature as an independent almost intelligent body, which operates on human victims.

Table 2: Natural Forces Across Process Types

Process Type	Pakistani Text		American Text	
	Count	Example Verbs	Count	Example Verbs
Material (Actor)	4	"devastate," "affect"	23	"swallow," "wash away"
Material (Goal)	2	"exacerbated by"	1	"caused by"
Relational	8	"is, has been"	6	"was, remain"
Existential	3	"there are"	9	"emerged, exist"

On the contrary, the Pakistani text mainly builds floods in relational and existential terms. The metaphor at the beginning of the poem is used to illustrate a nominal group, which although dramatic serves as Carrier in the relational activity of the sentence "keeps on destroying" and not as Actor. Passive constructions are common: "aggravated this year" (line 12), and nominalizations: "touched by the caprice of nature negatively" (lines 16-17). This grammar tactic backs up natural agency, foregrounds human and institutional accountability.

The environmental constructions of the texts are further differentiated by other circumstantial elements. In the American text, space conditions have been pointed out; every situation is measured accurately: 40 minutes on a motor boat (line 9), 200 miles long (line 13), 12-feet deep (line 78). This situation builds up the disaster as something that can be measured and observed. The Pakistani text, in its turn, utilizes the situation of cause and condition: as a direct consequence of the rapid growth of population (lines 14-15), in the conditions when the press has already reached a certain level of maturity (lines 28-29). These grammatical decisions contribute to the integration of the disaster into the contexts of larger socio-political issues than the disaster itself is supposedly a natural one.

The ergative analysis indicates more patterns. In the American text, effective (transitive) constructions are mostly used, in which natural forces result in change in external Goals: "monsoon waters swallows villages" (title), "water levels are still rising" (line 23). Instead, the Pakistani text prefers middle (ergative) constructions in which no particular cause is mentioned in which the Medium is changed: "population being adversely affected" (line 16), "impact of floods is muted" (line 40).

Thematic Group 2: Human Experience and Response

Grammatical expression of human agents indicates the difference in the conceptualisation of agency and capability in case of disaster. Table 3 shows systematic variation of the functioning of humans in various and distinct roles of participants.

Table 3: Human Participants by Role

Participant Role	Pakistani Text		American Text	
	Count	Examples	Count	Examples
Actor	8	"we, people"	12	"residents fled"
Goal	11	"people"	28	"villagers, families"
Senser	16	"we"	7	"those, local"
Carrier	14	"people"	19	"poor, homeless"
Behaver	1	-	1	"staying"
Beneficiary	3	"people"	8	"families"

The Goals of material processes largely favor humans in the American text, although they are mostly victims: "Millions hit by a catastrophe" (line 7), "washed away" (line 47), mobbed by people desperate to be helped" (lines 118-119). When human beings are represented as the Actors, their deeds are rather reactive than agentic: ran from his village (line 26), fled (line 24), climbed atop (line 87). This is a grammatical structure that builds the victims of the disaster as people who do not have the capacity to act but can only fly or passively withstand.

The Pakistani text has much more different patterns in that humans often serve as Sensers in the mental processes of cognition and perception. The first-person plural pronoun is repeated, Senser in a critical question: can we mitigate the impact (line 18), can we help avert (line 19), are we to accept this as our

fate (line 20). Such grammatical structure makes it a position of citizens to be able to comprehend, interpret, and possibly respond to the causes of disasters instead of being the victims.

Behavioral processes are mentioned insignificantly in both texts, but set some important patterns. The remaining in flood areas as a form of protection created in the American text when it says that they stay to protect what they have (line 76) and the processes of behavior in the Pakistani text seem to be limited indicating that physical reaction is not as important as cognition and political activity.

Agency patterns are also further clarified through the analysis of voice. In the American text, 31% of material processes that impact people use passive voices with the deletion of the agent: "flood waters have affected them" (line 111), marooned on the rooftops (line 34). Pakistani text is very strategic in the use of passive voice, which underlines the institutional responsibility: elected or ousted on the basis of the performance (line 36), allowed to exercise the civil and political rights (line 39).

Thematic Group 3: Institutional and Governmental Response

Grammatical forms of institutional actors demonstrate radically different conceptualizations of government capacity and responsibility. Table 4 illustrates the role played by institutional participants in the different types of processes in both texts.

Table 4: Institutional Actors Across Process Types

Institution	Process Type	Pakistani Text		American Text	
		Count	Verbs	Count	Verbs
Government Rescued	Material	3	"build, conserve"	6	"provided"
	Relational	7	"is, must be"	4	"has failed"
	Verbal	5	"argue, said"	9	"said"
Pledged International Pledged Organizations	Material	1	-	5	"arrived"
	Relational	0	-	2	"led by"
	Verbal	2	"claims"	1	"called"
Military Provided	Material	0	-	2	"rescued"
	Relational	0	-	0	-

The Pakistani text builds government mainly through relational processes which assess the institutional features and duties: strong institutions of democracy, elected or ousted representatives, accountable (line 35, line 36 and line 37). When government is presented as an Actor in material processes, the actions are hypothetical or compulsory instead of real: must be played (line 46), need to build (line 48), need to strengthen (line 54), and so on. This kind of grammar pattern focuses on what the institutions ought to be doing but not what they have done.

The American version introduces the actors of the government in material processes of rather little help: "provided cash handouts" (line 121), rescued over 50,000 people (line 122). Such positive acts are, however, subjugated instantly with relational processes of failure: "The government has failed utterly" (line 88), the quote is a direct quote of a victim of the flood. International actors are more agentic than the local government: 44 flights with aid... have arrived (lines 126-127), The U.S. has pledged 30 million dollars (line 128).

There are various constructions of authority expressed through the verbal processes. Verbal processes are used to present the theoretical frameworks in the Pakistani text: "Sen... argues" (line 22), to build intellectual authority of the democratic solutions. Verbal processes in the American text are used to make

official statements to admit the inadequacy: "said that the government would have to increase its preliminary estimates" (line 131), "said that rich countries... must do more" (line 129).

Thematic Group 4: Knowledge, Communication, and Understanding

The construction of knowledge and communication reveals distinct epistemological orientations toward disaster understanding. Table 5 illustrates the distribution of verbal and mental processes that manage information and cognition.

Table 5: Verbal and Mental Process Analysis

Process Feature	Pakistani Text		American Text	
	Count	Examples	Count	Examples
Verbal Processes (Total)	14		18	
Direct Speech	2	"monsoons"	7	"we ask"
	12	"argues, claims"	11	"said that"
Indirect Speech				
Mental Processes (Total)	37		15	
Cognition	21	"understand"	6	"thought"
	11	"see"	7	"visible"
Perception				
Emotion	5	"unfortunate"	2	"desperate"

The Pakistani text evidences the dominance of mental processes in cognitive form that form the building of the understanding as the focus of disaster response. The presence of the words of cognitive nature, such as "mitigate" (line 18), "avert" (line 19), "distinguish" (line 29), etc., places disaster management as a thought activity that needs analysis and understanding. Represented thoughts are projected: these are the need to build (line 48), the urgency of the intervention (line 45), construction of common thinking apparatus.

The American text gives precedence to perceptual rather than cognitive mental processes: visible from space (line 14), mark what is left (line 11), reveal the extent (line 54). Such a focus on visual material builds the catastrophe as an observable event instead of a structural issue in need of study. Individual accounts of suffering are mostly projected through verbal means: "We had to make a choice" (line 29), "We are poor people" (line 115), which results in emotional impressiveness but restricts the use of the systematic analysis.

Patterns of authorities are indicated in the distribution of Sayers. The language of the Pakistani text gives Sayer the role of intellectual powers and abstract things: "Sen argues" (line 22), Evidence shows (line 27). The American version allocates the character of the Sayer to authorities who gave incomplete answers: "Officials said" (line 17), authorities said" (line 108), and victims who are desperate: he shouted" (line 69).

Interpersonal Metafunction: Negotiating Relationships and Attitudes

The interpersonal analysis looks at how grammatical decisions locate the readers, define authority, and social duty bargain. By use of mood and system of modality, the texts create various relations among

writers, readers, and those represented in which they convey various positions of truth, duty and feasibility.

Mood System: Constructing Dialogue and Authority

The mood analysis reveals contrasting strategies for reader engagement and information exchange. Table 6 demonstrates the distribution of mood types, showing how each text positions readers differently within the disaster narrative.

Table 6: Mood Distribution

Mood Type	Pakistani Text		American Text	
	Count	%	Count	%
Declarative	138	90.2	169	97.1
Interrogative	12	7.8	3	1.7
Imperative	0	0.0	0	0.0
Exclamative	1	0.7	1	0.6
Minor Clauses	2	1.3	1	0.6

This dialogic interaction with the reader is achieved by the strategic application of interrogatives used in the Pakistani text. The first set of questions consists of questions that can be as follows: Can we help to prevent the suffering of our people? Can we diminish our losses? Or shall we submit to this? (lines 18-20) - serves not only an informative purpose but it also tries to dispel the beliefs of the readers regarding the inescapability of the disaster. These interrogatives make use of inclusive pronouns (we, our) which place the readers as active participants in national debate as opposed to passive receivers of information.

The grammatic form of these interrogatives shows advanced modal stratification. The modal verb can (along with material processes, help avert, diminish) is able to create the capability as present, but not absolute, implying that the agency exists in the first place, but it needs to be activated. The last interrogative which becomes a relational process with modal auxiliary to meaning that we ought to accept is aimed at the challenge of fatality of acceptance not obligatory.

The lack of imperatives in both texts is important, however, it serves others. This lack in the text Pakistani is obtained by modulated declaratives, which act as indirect commands: "Our press must play its role" (line 46) and We need to strengthen (line 54). These indirect instructions are even missing in the American text, as they stand in a descriptive distance without giving command.

Modality: Epistemic Claims and Knowledge Authority

The modality analysis reveals distinct orientations toward certainty and evidence, with significant implications for how climate disaster knowledge is constructed and validated. Table 7 illustrates the distribution of epistemic modality values across texts.

Table 7: Epistemic Modality Distribution

Modal Value	Pakistani Text		American Text	
	Count	Examples	Count	Examples
High	8	‘must, certainly’	19	‘has been, is’
Median	21	‘can, would’	11	‘could, appeared’
Low	14	‘may, might,	7	‘seem, possibly’
Modal Adjuncts	12	‘perhaps, probably’	5	‘nearly, mostly,

The American text is highly epistemic modal on the occasions of making scientific assertions and quantitative data: it has three times the average rainfall in Pakistan (line 16), it is visible at space (line 14), more than 30 million people have been affected (line 112). Scientific observation is constructed in this grammatical pattern as certain and authoritative. This assurance is promoted by numerical accuracy: "97 degrees Fahrenheit, 81 per cent humidity" (lines 116-117), which would be what Fairclough would classify as the technologization of discourse which hides interpretive decisions behind the apparent objectivity.

Most median modality is used in the Pakistani text which is characterised by analytical caution and intellectual interest: can we mitigate (line 18) would argue (line 50), seldom find (line 42). This modal form of generating knowledge is a debatable notion instead of being definite, which encourages critical dialogue instead of passive watching. The author frankly modalizes by using attributive sources: aptly described (line 12), Sen... argues (line 22), which ensures direct epistemological clarity.

The various evidential strategies are manifested by modal adjuncts. Quantifying adjuncts of the American text (almost 33,000 square miles) (line 109), (some 200 miles long) (line 13) form effects of preciseness but in reality represent approximation. Pakistani text makes use of evaluative adjuncts--unfortunately (line 41), crucial (line 14)--that directly indicate evaluative position instead of purporting to be neutral in their interpretation.

Modulation: Obligation and Social Responsibility

The analysis of deontic modality reveals starkly different constructions of obligation and responsibility in disaster response. Table 8 demonstrates the distribution of obligation and inclination markers.

Table 8: Deontic Modality Distribution

Modal Type	Pakistani Text		American Text	
	Count	Examples	Count	Examples
Obligation-High	7	'must, need to'	2	'must, have to'
Obligation-Median	11	'should, ought'	1	'should'
Obligation-Low	3	'could, might'	1	'could'
Inclination	4	'willing, want'	3	'unwilling, desperate'

Pakistani text is richly adorned with deontic modality, which is used to build civic and governmental duties: "Our press must play its part" (line 46), "representatives... must spend more time" (lines 56-57), We also need to strengthen our democratic institutions (line 54). These modes make the disaster response a moral and political imperative instead of charity that is not a necessity. The high-value obligation modals including the inclusive pronoun our make the institutions and the citizens share responsibility.

The analytical register is preserved in the grammatical indication of necessity in the modal sign, but asserts the necessity. The poem uses what Halliday calls explicit objective modulation, in which obligation is seen as naturally inherent in situations, as opposed to being enforced by the speaker: the need for our elected representatives" (line 56), Of foremost importance... is the need" (line 55).

Minimal deontic modality is used in the American version, and there is only a single instance of obligation, in a quoted official remark: rich countries... must do more (line 129). This mode of speech separates the voice of narration as an advocate of responsibility and preserves journalistic objectivity, which may blur the ethical requirements. Because there is a sense of obligation, when it comes it has

more to do with victims than institutions: we have to make a decision whether we get our children out (line 29) and makes impossible the construction of possibilities, not institutional obligation.

Textual Metafunction: Organizing Message and Information Flow

The thematic analysis focuses on the ways the information is organized in a thematic structure, generates coherence, and favors some interpretations. Insight into patterns of theme choice, markedness, and information flow has been demonstrated through systematic analysis of these elements, which give rise to different patterns that indicate different communicative priorities and cultural assumptions regarding how knowledge is organized.

Thematic Structure: Points of Departure

The analysis of topical themes reveals fundamental differences in how each text establishes interpretive frameworks. Table 9 demonstrates the distribution of thematic elements across our four analytical groups.

Table 9: Topical Theme Distribution by Thematic Group

Thematic Group	Theme Type	Pakistani Text		American Text	
		Count	%	Count	%
Natural Forces	Environmental	8	5.2	31	17.8
	Temporal	6	3.9	14	8.0
	Spatial	3	2.0	23	13.2
Human Experience	Human Actors	28	18.3	42	24.1
	Abstract Concepts	31	20.3	4	2.3
Institutional	Government	19	12.4	11	6.3
	Organizations	7	4.6	8	4.6
Knowledge	Authorities	14	9.2	3	1.7
	Facts/Claims	37	24.1	38	21.8
Total		153	100	174	100

The Pakistani text demonstrates strong preference for abstract concepts as themes: "Evidence in support of Mr Sen's hypothesis" (line 27), "The question" (line 18), "The juggernaut of the calamitous floods" (line 11). This thematic pattern creates environmental disaster as a conceptual problem which requires intellectual engagement. Abstract themes often introduce complex nominal groups that actively package the entire propositions: "The impact of natural disasters" (line 27), enabling the dense information packaging that assumes the reader's capacity for abstraction.

The text from the American newspaper grants a privilege to the concrete spatial and human themes. For instance, "The town" (line 8), "Khairpur Nathan Shah" (line 10), "Mukhtar Ali" (line 26). This certain pattern actually creates the narrative immediacy through the use of specific locations and individuals. It constructs the environmental disaster as observable reality rather than the analytical problem. The text frequently employs what Halliday call as the "derived themes" which is used for the elements that the maintain topical continuity through the semantic relationship rather than repetition: "The tops of tall houses" (line 11), "Those unwilling to leave" (line 32).

The American text demonstrates constant thematic progression, where a single overarching theme (the flood) remains stable while rhemes provide new information: "The floods arrived... Water levels are still rising... Rainwater that had fallen" (lines 23-25). This pattern maintains narrative focus while accumulating descriptive detail.

Marked Themes and Information Prominence

The deployment of marked themes reveals strategic choices about information prominence and interpretive framing. Table 10 analyzes the distribution and function of marked thematic elements.

Table 10: Marked Theme Analysis

Marked Theme Type	Pakistani Text		American Text	
	Count	Examples	Count	Examples
Spatial	3	‘in our case’	21	‘in southern Pakistan’
Temporal	8	‘despite’	18	‘now, on Friday’
Causal	11	‘as a result’	6	‘given the losses’
Conditional	7	‘where there’	2	‘if climate change’
Concessive	4	‘despite’	1	‘though there is’
Comment	9	‘cruciality’	3	‘still’

Causal and conditional marked themes are widely used in the Pakistani text, creating of logical relationship: As a direct result of the rapid increase in population (lines 14-15), In circumstances when the press has reached a certain level of maturity (lines 28-29). These are indicative themes of cause and contingency, which establish disaster as a systemic production and not natural. Democratic variables are highlighted by the conditional themes especially: "where democratic institutions are strong" (line 35), "where communication channels allow" (line 38).

The prominent themes in the American text include mostly spatial and time-related: In Southern Pakistan (title), On Friday (line 63), Now (line 10). These themes build what Hasan calls “contextual configuration - placing spatiotemporal coordinates in which event coverage is news instead of analysis. The richness of the spatial marked themes, such as, but not limited to, around Khairpur Nathan Shah (line 32), across the province (line 106), creates disaster geography as interpretively meaningful.

Evaluative differences are identified by thematized comments. The themes of interpersonal relations used in the Pakistani text clearly indicate the analytical position: "Crucially" (line 14), "Unfortunately" (line 41), Of foremost importance (line 55). Such grammatical options recognize subjective assessment but claim interpretive power. The American text is not so interpersonal and it has a seeming objectivity, which conceals judgemental decisions in the choice of lexicon and process type allocation.

Information Flow: Given-New Dynamics

Causal and conditional marked themes are widely used in the Pakistani text, creating of logical relationship: As a direct result of the rapid increase in population (lines 14-15), In circumstances when the press has reached a certain level of maturity (lines 28-29). These are indicative themes of cause and contingency, which establish disaster as a systemic production and not natural. Democratic variables are highlighted by the conditional themes especially: "where democratic institutions are strong" (line 35), "where communication channels allow" (line 38).

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Integrative Analysis: From Grammar to Ideology

The integration of patterns across metafunctions reveals how grammatical choices construct coherent but contrasting worldviews about climate disaster, vulnerability, and responsibility. This section examines how the three metafunctions work synergistically to create what Halliday terms "meaning potential"—the total semantic resources deployed to construct social reality.

Constructing Climate Vulnerability Across Thematic Groups

Grammatical construction of vulnerability illustrates how the use of linguistics is naturalizing or denaturalizing the effects of disasters. Table 11 demonstrates the metafunctional assimilation in climate vulnerability building within our thematic groups.

Table 11: Metafunctional Integration in Climate Construction

Thematic Group	Ideational	Interpersonal	Textual
	Dominant Pattern	Dominant Pattern	Dominant Pattern
Natural Forces	Pak: Relational US: Material	Pak: Median modal US: High modal	Pak: Abstract theme US: Spatial theme
Human Impact	Pak: Mental US: Goal/ Passive	Pak: Inclusive we US: They/ them	Pak: Human Theme US: Individual name
Institutional	Pak: Obligation US: Material/ fail	Pak: High deontic US: Low deontic	Pak: Institution theme US: Derived theme
Knowledge	Pak: Verbal/argue US: Verbal/ said	Pak: Authority US: Witness	Pak: Evidence theme US: Perception theme

The grammatical patterns in the Pakistani text develop climatic vulnerability as a politically constructed. Semantic density produced by the combination of relational process (in democratic institutions are strong), median epistemic modality (can mitigate), and abstract thematic structure (The impact of natural disasters) inhibits easy causation narratives. This way of grammaticity confronts natural necessity by placing catastrophe in the democratic structures of accountability.

The grammatical options in the American text naturalize climatic vulnerability by dominating material processes, modifying high epistemic modality of physical description, and concrete spatial thematizing. The repetition of the scheme floods + material process + human goal ("floods absorbed villages," waters carried away houses) creates a linear causation which blurs the mediating role of politics. The agent deletion of the passive voice - affected by flood waters (line 111), hit by a catastrophe (line 6) - just adds to the further deprivation of human agency in the production of vulnerability.

Democracy, Development, and Disaster Narratives

Grammatical construction of democracy demonstrates opposite conceptualizations of relationship of the political systems to disaster. The Pakistani chronicles the way in which democratic deficits are causally related to the disaster effects in terms of causal conjunctions and conditional clauses: where democratic

institutions are robust... the effects of floods are dampened (lines 35-40). This grammatical formulation makes democracy not an independent field of disaster management but a constituent part of it.

The application of the Sen model in projected verbal modes, i.e., Sen... argues that (line 22), creates a theoretical authority of interpretation of a democratic one. The following relational processes that determine democratic features, where the press has developed a degree of maturity (lines 28-29), where accountability is provided (line 37) are democratic built using non-structural features of functional aspects. The approach allows to criticize Pakistani democracy without being systemic and focusing on individuals.

The slight concern with democratic matters in the American text is the case of grammatical absence democracy is not found in thematic position of the work or in any form of participant in any type of process. When governance comes on the scene, it acts as Actor in material processes that have failed: "The government has totally failed to do so" (line 88). This type of grammar is used to personalize institutional failure instead of considering any structural connections between political systems and the vulnerability to disasters.

These orientations are reinforced into the modality patterns. The deontic mode of the Pakistani text on democratic duties "Our press must play its part" (line 46) - renders the media and the government its disaster prevention roles. The lack of deontic modality of institutions in the American text as well as the degree of high epistemic modality of the physical description means that disasters are natural factors beyond the control of politics.

International Relations and Power Asymmetries

The Pakistani text hardly refers to global actors, but rather local institutional capability. At the point where international structures are involved, they serve as intellectual resources of power "UN Secretary General" (line 13), "Nobel laureate economist" (line 21) - not material support. This option of grammar forms knowledge instead of resources as the main contribution of the international cooperation, but does not violate the national dignity, admitting the interconnectedness between nations.

The ideological positioning is shown by the systems of pronouns. The regular use of the inclusive we and our in the Pakistani text unites the nation, making everyone responsible: our people (line 18), our press (line 46), our elected representatives (line 56). The American version uses the distancing pronouns, such as in the first line, 32, those unwilling, and the second and third, line 34 and line 68, they and them, which shape the victims of floods as the Other, as Said defines orientalist distance between the Western viewer and the Eastern victims.

Theoretical Contributions to SFG and Critical Discourse Analysis

The analysis shows that the principle of metafunctional integration by Halliday is correct, as the ideational, interpersonal and textual choices interact to form coherent worldviews. The combination of the relational processes, the median modality and the abstract themes in the Pakistani text is a form of analytical structure that entraps the disaster within the democratic responsibility. The combination of material processes, high modality and concrete themes in the American text produce narrative immediacy which can bring about sympathy but can possibly blur systemic causation. These patterns show what Halliday refers to as registerial consistency- the predictability of decisions made by different metafunctions that result in the formation of predictable discourse types.

Table 12: Summary of Distinctive Grammatical Strategies

Metafunction	Pakistani Text	American Text
	Characteristic Strategy	Characteristic Strategy
Ideational	Relational/mental dominance	Material/ Existential dominance
	Abstract participants	Concrete participants
	Causation circumstances	Spatial Circumstances
Interpersonal	Median epistemic modality	High epistemic modality
	High deontic modality	Minimal deontic modality
	Inclusive Pronouns	Distancing pronouns
Textual	Abstract/conceptual themes	Spatial/temporal themes
	Logical Progression	Chronological Progression
	High given-new ratio	Low given-new ratio

The results further expand the field of critical discourse analysis and show how grammatical patterns are what Fairclough refers to as orders of discourse the semiotically organized forms in which specific areas of social life are structurally organized. The grammatical decisions of the American text are consistent with the neoliberal language that creates the disasters as external market failures in need of technical reforms. The grammar of Pakistani text is an indication of postcolonial discourse, which connects modern day vulnerability to the previous political systems in history. These trends indicate that climate communication cannot be politically neutral, grammatical choices are bound to encapsulate ideological assumptions regarding causality, agency and possibility.

Lastly, this discussion shows that climate vulnerability is not physically generated but is grammatically constructed. The systematic variations of the grammatical resources used in the work of the Pakistani and American media show that a similar material event, the 2022 floods, is turned into various semiotic reality with the help of linguistic selections. This conclusion has far-reaching consequences on the international cooperation on climate, implying that the apparent differences on the issue of climate action might be partly due to grammatical construed differences in the way of understanding climate calamities.

CONCLUSION

Summary of Key Findings

The transitivity analysis has indicated that there are deep variations in the ecological agency formations in the cultural contexts. The material processes used in the American text as Actors to create floods (48.3% of all the processes) are highly effective in creating floods as independent agents of destruction through the use of descriptive verbs such as swallows, washed away and dissolved, which is very accentuated by nature as overwhelming power. However, in sharp contrast, the text of the Pakistani text lean to relational and mental processes (62.7% combined) places the disaster in contexts of understanding and democratic accountability. Such a grammatical deviation is not just a stylistic one but ideological because the American scheme of things is naturalization of climate disasters as something that cannot be controlled by the human being whereas the Pakistani scheme of things demands the political and systematic interpretation.

The interpersonal analysis has revealed the opposite approaches in placing readers and bargaining knowledge claims. The strategic use of interrogative mood (7.8% of clauses) and inclusive pronouns, which is provided in the Pakistani text, makes it a dialogic discourse that places the readers as equal participants in the process of national discussion of disaster response. The dominant role of median epistemic modality (21 instances) and high deontic modality (7 instances) creates a paradigm according to which the knowledge is controversial, but the action is mandatory. On the contrary, excessive declarative

mood (97.1%) of the American text and the high level of epistemic modality of describing facts provide the transfer of information in monologues and position readers as remote spectators of the unavoidable disaster.

The textual discussion has shown that the information packaging of disasters depict and support cultural beliefs regarding the nature of disaster causes. The abstract (20.3) themes and causal marked themes of the Pakistani text support the ability to argue about the systemic factors in a complex way, whereas the concrete spatial themes (21.2) and the time themes (21.2) of the American text help to remain concentrated on the reality of the present moment. The Given-New dynamics demonstrate the contrastive ways of constructing the reader identity and potential where the Pakistani text expounds on the common knowledge in democracy whereas the American text defines fundamental geography.

Limitations and Future Research Directions

These findings should have a number of limitations to put them into perspective. The two texts analyzed are of September 2022, which covers a particular point in time that cannot be representative of all Pakistani or American climate discussion. This emphasis on the English-language media does not cover vernacular media, which can make use of alternative grammatical choices, especially where the grammar of the language used is not that of English. The production and reception studies of intentions on the part of journalists and interpretations on the part of the readers are not presented in the textual analysis. Moreover, the analysis carried out by a single coder is consistent, yet it is not as well-validated as it would have been by the multiple coders.

Concluding Remarks

This research has established that vulnerability to climate is not simply an experienced state of being but a grammatically constructed state. The systematic variations in the use of grammatical resources in the Pakistani and American media demonstrate that the world is not just a reflection of the reality but the language also creates it. The 2022 Pakistan floods are not a single reality; this is constructed by grammatical decisions in a variety of realities. The processes and high modality of the American media and concrete themes of the story form a discourse of natural catastrophe in need of humanitarian intervention. The relational processes, median modality, and abstract themes of the Pakistani media develop crisis of democracy that needs political transformation.

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