

**DEPICTION OF CLIMATE CHANGE IN
MEDIA DISCOURSE: A CORPUS-ASSISTED
ECOLOGICAL STUDY**

BY

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**Depiction of Climate Change in Media Discourse: A Corpus-
Assisted Ecological Study**

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ABSTRACT

Title: Depiction of Climate Change in Media Discourse: A Corpus-Assisted Ecological Study

Texts in newspapers have two purposes: first, they provide a description, and second, they depict that description as true, false, certain, or uncertain. This study investigates the description of climate change in the print media and examines how language is used by newspapers to establish facticity of the information about climate change in the newspaper texts. This study uses Potter's (1996) fact construction theory as a theoretical framework and Stibbe's (2015) facticity model as an analytical framework to analyse the data. The study used a mixed-methods approach. First, 15 articles from three newspapers about climate change from seven countries in the eastern and western worlds were gathered over a five-year period, from 2017 to 2021, using a judgement sample tool. Second, the lexical categories (nouns, verbs, and adverbs) were extracted from the corpus using the Baker (2006) model of concordance with the help of AntConc corpus tool. The results demonstrate that, with a difference of almost 21,000 words, lexical categories are more frequently used in western newspaper corpus data than in eastern data. The study concludes that the description of climate change in Western articles was based on fact, using strong modal verbs, adverbs, and nouns. It is expected that this study will spark interest in the use of lexical categories to assess the authenticity of speeches and even books.

Keywords: Facticity, fact construction, climate change, ecosystem, media discourse and mother earth.

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LIST OF ABBREVIATIONS

1. WMD Weapon of Mass Destruction
2. E East
3. W West
4. N Net Percentage
5. M Means Percentage
6. CIE Continued Influence Effect
7. UK United Kingdom
8. US United States
9. IPCC Intergovernmental Panel on Climate Change
10. CDA Critical Discourse Analysis
11. UN United Nations
12. UNOCA United Nations Regional Office for Central Africa
13. GRA Government of the Republic of Afghanistan
14. UNDP United Nations development Program
15. GHG Greenhouse Gas

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CHAPTER 1

INTRODUCTION

The media is a primary source of information used to establish facticity for the public. However, the way in which the media uses linguistic features to describe events may create a sense of facticity that is not necessarily aligned with the truth. In some cases, these distorted facts are used maliciously to construct lies in order to deceive people. According to Halliday (2001), problems such as the extinction of species and pollution affect not only biologists and physicists but also the applied linguistic community. Social media platforms like Twitter and Facebook have intensified the spread of distorted facts, using linguistic features to serve the interests of companies on scientific topics (Shao et al., 2018; del Vicario et al., 2017).

The aftermath of Hurricane Sandy in 2012 saw a major trend on Twitter in which climate change was depicted as a conspiracy against the public and a means to divert attention from expanding the size of government (Jacques & Knox, 2016). The "Climategate" incident in 2009, in which emails from scientists were intercepted and posted online, is a well-known example of fake news. The scientists were accused of collaborating to alter data and mislead the public. However, nine studies conducted in England and the United States of America found no evidence of improprieties among scientists (Cook, 2014).

The media's use of linguistic features to spread distorted information harms our ecosystem. Humans, animals, birds, and the habitats of these species are endangered due to misinformation, and climate change is one of its consequences (Stibbe, 2015). According to Silver (2013), animals are the original inhabitants of the Earth, while humans are a migratory species. Therefore, we must live in a way that does not endanger the Earth's original inhabitants. People have tried to pollute the environment in various ways, including greenhouse gas emissions, water pollution, land pollution, and, more importantly, the spread of false information using less factual linguistic features. The language we use is becoming increasingly polluted, much like the air we breathe, the water we drink, and the food we eat. The language that surrounds us is

mechanical and lifeless instead of living and human. Language appeals more to dead people with a lifeless voice than it does to us. Language is the nervous system of society, polluting the nervous system, and the entire ecosystem (Gross, 1969).

As Gross (1969) noted, language can be seen as the nervous system of society, and it can become disturbed by distortions in language. Medimorec and Pennycook (2015, p. 133) discuss one instance of this phenomenon in their article titled "The language of denial: Text analysis reveals differences in language use between climate change proponents and skeptics." They argue that the use of linguistic features can lead to the distortion of language, which can in turn affect public opinion on issues such as climate change.

The committee observed temperature change. (Noun clear the facts)

Temperature change was observed. (Omission of noun creates doubts)

Language distortion can create doubts and problems for humans, and it can also harm animals, air, forests, and other species (Stibbe, 2015). Distorted language uses techniques to build false credibility, which harms the climate. Stibbe (2015) describes these techniques as modality, calls for expert authority, quantifiers, hedges, and presuppositions. Manipulators use these techniques to distort language and harm the ecosystem. Facticity trends in ecolinguistics have mainly been studied in the context of ecosystems. Ecolinguistics is a central field in terms of the scale and intensity of the debate and its social and ecological significance (Stibbe, 2015).

Esser and Vliegthart (2017) argue that comparative analysis offers multiple interacting benefits. Specifically, it improves one's understanding of their own civilization by contrasting its well-known routines and structures with those of other systems. Comparison also raises awareness of other systems, cultures, and thought and behavior patterns. The goal of this study is to shed light on the discussion about climate change in both Western and Eastern media. Given the many opposing viewpoints on the phenomenon of climate change, a comparison is necessary to fully explore the issue. According to a recent synthesis by Esser and Hanitzsch (2012a), comparative research involves comparing at least two macro-level cases (in this case, territories, i.e. East and West, and their constituent elements, such as media and newspapers) in which at least one object of investigation is pertinent to the comparison's field. Since this corpus study includes a large amount of data from two different worlds, a comparison is necessary

to determine factual information about climate change. Furthermore, research questions can only be answered by comparing Eastern and Western media data.

Stibbe (2015) argues that the linguistic features of any text can determine its factual accuracy. Therefore, this study collected articles related to climate change using a judgment sampling tool. The population consists of articles from news websites and newspapers about climate change, with the keywords "ecosystem," "deforestation," "global warming," "carbon emissions," and "ecology" from 2017 to 2021. This research focuses on the linguistic features that can affect language facticity. To analyze the data, Potter's (1996) fact construction theory and Stibbe's (2015) facticity model are the main contributors. Baker's (2006) concordance model is one of the most qualitative modes of analysis associated with corpus linguistics and is used to separate the corpus data into lexical categories such as nouns, verbs, and adverbs.

1.1 Background of the Study

Cook (2019) outlines some strategies for combating disinformation about climate change, such as refusing incorrect information with facts, fact-checking material, persuading individuals through reasoning, avoiding conspiracy theories, and cherry-picking (taking one fact out of context). He does not investigate the text's lexical categories to ascertain its facticity. Farrell (2019) discusses another facet of disinformation: the practice of individuals or organisations with vested interests paying scientists and other influencers to slant the facts in their favour. According to this study, wealthy individuals manipulate scientific experiment results while claiming to be helpful and use their influence to change the truth. The publications of these people and groups about climate change produce more than three million words to distort the fact (Farrell, 2019).

According to Lewandowsky's (2020) research, the factors of education, correction, immunisation, culturally relevant communications, consensus messages, debunking, changing attitudes, and political neutrality can all be used to stop misinformation. Additionally, there is no linguistic analysis of the content, which can stop the spread of false information about climate change. There are many ways to stop misinformation, but the best is the continued influence effect (CIE) (Cacciato, 2021). In this context, the CIE refers to the propensity for information that was initially true but later shown to be false to continue influencing a listener's memory and thinking.

According to Cacciatore (2021) warnings, evidence to fill in the gaps, recency, primacy, prolonged processing, social monitoring, and numerous elements related to media use, literacy, and emotion are all viable ways to halt misinformation. All these and many other methods could be used to lessen the impact of or dispel myths about climate change.

Potter (1996) employed several criteria, including expert opinion, culture, expectations, preoccupations, prior experiences, present needs, values, and beliefs. The researcher does not mention using lexical categories to create truth or fact. Lim (2018) assessed Fact Checker and PolitiFact, two US fact-checking websites. Fact-checkers could increase the uniformity of their assessments by merely stating the types of logical fallacies without giving these observations a score since they do not utilise directly comparable scales.

Furthermore, fact-checkers do not frequently examine the statements. For statements in the relatively ambiguous score range, the rate of agreement on their factual accuracy is relatively low when they do. A significant social, political, communicative, and linguistic issue is the fake discourse in the media and linguistic practices. Its resolution hinges on several variables, beginning with legislative changes to culture and policy, followed by state-level fact-checking, and culminating in the development of active citizenship among members of civil society (Maiba, 2021).

Potter (1996) presented the fact construction theory where he mentioned some aspects of fact construction. Potter's three methods of interpreting facts are; indexicality, reflexivity, and documentary. The most relevant to this study is the third one. This documentary says that the construction of facts was inevitably influenced by the expectations, preoccupations, past experiences, and current needs, values, and beliefs of those constructing interpretations and descriptions. Potter used these terms for the construction of reality. These terms do not relate to linguistics categories/features, which may help construct reality. He talked about the social features that bond one to make a reality.

In a research paper, Grace (2016) discussed the linguistic construction of reality. Grace (2016) noted that he limited himself to the conceptual event, as an event is essentially the speaker's vision. It is the speaker who, primarily, determines how to characterise the structure of the event (in this case, an act committed by someone,

directed to someone, and experienced by something) and its many features (selling as the act, a man, the doctor, a car, respectively, in the other roles). Like Berger and Luckmann (1996), Grace (2016) suggested a conceptual occurrence with the same meaning as externalisation. They used the term idea, Grace (2016) used the phrase event, and my theory used the term thinking.

Carvalho (2002) attempted to construct reality through several methods, such as assumptions, conceptions, and categories necessary for social processes. The interpretations ascribed to reality are not written in stone and waiting to be revealed. Instead, they are a social product or structure. They are distinct ways of looking at the world advanced and reproduced by people in an ongoing communication process.

Language plays a crucial role in social constructivism. Individuals can only communicate with others about reality using a language, whether verbal, symbolic, or otherwise. However, language is much more than a means of conveying ideas. Language provides the notions and categories we think about the world, and language is a sort of social activity because the world is socially produced through/in it.

Language is more than a source of communication as well (Carvalho, 2002). It results from a cognitive process that uses language strategies to create/construct truth/reality/fact/. All scholars agreed on one thing: reality is produced through social acts and strategies. Only one scholar, Stibbe (2015), spoke more about social action than the others. He emphasises the importance of word string combinations in producing reality/fact. These words are the result of thoughts and the driving force behind the development of reality/fact. Only cognition, not social events, beliefs, wants, experiences, or values, contributes to the production of reality/fact. We can still construct reality without these, but without thought, there is no hope of reality construction; even the constructor can go against social events, beliefs, values, previous experience, and needs.

The investigation of the lexical categories to determine the facticity of the text is used for the first time. To the best of the researcher's knowledge, no studies are done on the facticity of the text, especially climate change media text. Numerous studies have been done on the broad subject matter of the investigation. Although these research studies are about climate change and misinformation but are far different from this study. This study analyses the linguistic features, i.e., lexical categories of the text

written or spoken about the ecosystem. The damage to our ecosystem is inflicted due to the use of the lexical categories in such a way that the listener or readers think the text is factual. The above research papers do not disclose the distortion of the facts caused by the linguistic patterns. The speakers or writers use linguistic patterns that may spread distorted information.

1.2 Statement of the Problem

Humans are 0.01% of all life on the planet (Carrington, 2018) but they consider themselves the central figure in the ecosystem, and they are, but not at the expense of other species (Stibbe, 2015). Humans are trying to destroy the Earth and its ecosystem somehow. Humans are the main contributors of global warming and emission of CO₂, greenhouse gases, and deforestation in the name of development. And that development affects humans as well as other species. We have polluted language by using linguistic features for language distortion to endanger ourselves and other creatures living on Earth (Stibbe, 2015). It is important to the survival of humans and other species to stop fake information or distorted facts, and find out reality through linguistic lexical categories. Researchers used different ways to stop fake information or distorted facts but no one has analysed text with lexical categories to find the facticity. Moreover, it is crucial to identify the linguistic features used to distort reality and find ways to stop that practice. Scholars and position holders used the language with linguistic features in such a way that the ordinary people accept their statements as reality but can harm the entire ecosystem. This study identifies that gap by analysing linguistic features employed by the media writers for the construction of facts. Mostly the media writers present distorted facts regarding climate change more against other issues.

1.3 Objectives of the Study

The study aims to:

- Determine the frequency of lexical categories in articles on newspapers that may distort the facts about the climate change.
- Discover the lexical categories generated by the rhetorical and functional goals of the data.
- Highlight the ideological differences between the Western and Eastern worlds on climate change

1.4 Research Questions

1. Which lexical categories appear in the corpora at significantly different frequencies?
2. What rhetorical or functional outcomes do lexical category clusters in the corpus produce?
3. What role do lexical categories in corpora have in indexing the Western and the Eastern ideological perspectives on climate change?

1.5 Research Methodology

This study employed a mixed-method approach and the research was carried out in three steps. First, the data was extracted using Baker (2006) model of concordance in corpus for nouns, verbs, and adverbs, through Antconc version 3.5.9 software (Laurence Anthony). Second, Stibbe's (2015) model of facticity was used as a yardstick to analyse lexical categories in the language of media about climate change. Further, this model was used to find out the facticity of the media language and its linguistic features. To construct the fact the writer/speaker used the linguistic features/devices. The linguistic features (devices) are nouns, verbs, and adverbs to make the description absolute truth, certain, uncertain, and absolute falsehood.

1.6 Significance of the Study

Ecolinguistics is an emerging discipline that is helping to mitigate the effect of climate change. It works to find out the weakness in language, which can create a problem for mother earth. This study analyses the text of the newspapers regarding climate change from the perspective of the facticity of lexical categories. Eloquent speakers and writers usually use words that significantly impact our environment. The wordings of these people sometimes distort the facts and promote a one-sided narrative without mentioning the accurate picture of the problem.

It is imperative to determine linguistic features that contribute to harming the ecosystem and what harm these features can bring to species in our ecological system. It is vital to stop language distortion by discovering fact construction methods, which can contribute to mitigating or enhancing climate change. It is pertinent that mother earth can become a place of peace and worth living in when text-only has facts.

Moreover, it is vital to make the public aware of fact construction through language, its impact on other species, and its effect on the ecosystem.

It is substantial to analyse text from the perspective of facticity. The first-time facticity model is used to find out the facticity of the text. It is essential to use lexical categories to find out the reality of the text related to climate change. Some rules related to the framework are developed to modify the model to the study. Moreover, the study divides the world into two halves, eastern and western. Scholars across various fields have debated the division of the world into two regions, namely the Eastern world and the Western world. This division is based on a variety of factors, such as physical geography, historical ideologies, cultural values and practices, and intellectual traditions. The Eastern world is primarily composed of Asian countries, while the Western world is comprised of European and North American countries. The dichotomy between the two regions stems from a complex interplay of geographic, political, cultural, and intellectual factors, as discussed by Josselin and Wallace (2001), Spykman (1942), Hobson (2012), and Mahbubani (2002).

The most significant angle of this study is to over-surface the ideological perspective of these two worlds on climate change using the lexical categories in significant places and frequencies. These lexical categories' frequencies help to place a text among the four principles of the facticity model, i.e., absolute truth, certain, uncertain, and absolute falsehood.

1.7 Delimitation of the Study

This study is delimited to media discourse only and further delimited to articles related to climate change. Moreover, many countries in the world have a significant impact and say in the affairs of climate change, but this study delimited to only seven impactful countries of each world, i.e., the eastern world and the western world. Both worlds have strong political weight in the world especially at the UN general assembly. The selected countries are members of G8, and G20 groups; the most powerful groups in the world. Apart from that, these countries actively participated in the drive of UN climate change, i.e., COP26, COP27. Further, three newspapers, due to their publication and readership with five articles related to climate change, have been selected. The following tables reflect the delimitation of the study:

Table 1.1*Eastern Media Data*

No	Country	Eastern Media Outlets		Total Articles = 105	
1	Pakistan	The Dawn	The Tribune	The Nation	3×5=15
2	China	People's Daily	Global Times	Daily Times	3×5=15
3	Russia	The Moscow Times	TASS News	RT News	3×5=15
4	Japan	The Mainichi	Japan Times	Kyodo News	3×5=15
5	India	Hindustan Times	Indian express	India Today	3×5=15
6	Saudi Arabia	Saudi Gazette	Al-Arabiya	Arab News	3×5=15
7	Turkey	Daily Sabah	Hurriyet Daily	TRT World	3×5=15

Table 1.2*Western Media Data*

No	Country	Western Media Outlets		Total 105 Articles	
1	USA	WallStreet journal	New York Times	Time	3×5=15
2	UK	The Guardian	The Mirror	BBC	3×5=15

3	France	The Local	LeMonde Diplomatique	24 News	3×5=15
4	Italy	Ansa News	Eurekalert	Rainews	3×5=15
5	Germany	Deutschland	The Local	DW	3×5=15
6	Australia	SMH	ABC	9 News	3×5=15
7	Canada	National Post	The Star	CBC News	3×5=15

1.9 Organization of the Study

The study has five chapters; the first chapter is the introduction of the study. First the problem is introduced in general and then specific to the issue. The background of the study reveals some past work related to misinformation or distorted facts regarding climate change. The statement problem discussed the gap which has been identified, and the research questions are formed. Later objectives of the study are discussed, along with their significance. It sheds light on the delimitation and limitation of the study. The study is delimited to climate change articles of media discourse only.

The second chapter presents and discusses a review of the related literature about the construction of facts and linguistic features' contribution to the facticity model. It discusses different aspects of language, lexical categories, and the construction of reality. Since this is an ecological study about climate change, it also sheds light on potter's (1996) fact construction theory and Arran Stibbe's (2015) facticity model. The chapter provides a concise, thorough overview of the studies done in this area, focusing on fact-distorted research publications. The research gap that serves as the foundation for the current study is categorised and discussed in the chapter's last section.

A thorough description of the research technique employed for the study is provided in the third chapter. The tools, data gathering methods and other crucial methodology components are all explicitly described in this chapter. It also provides a thorough explanation of the theoretical foundation used for this study. It also succinctly

and fully illustrates the decision, support, and motivation behind the chosen study approach, research design, and research methodology.

The fourth chapter of the study comprises wide-ranging and complete analyses of the data collected through judgemental sampling also known as a purposive or authoritative sampling tool. The data are analysed in two phases. First, analysis of frequencies of the lexical categories, which have been taken through Baker's concordance using Antconc software. After that, the model of facticity is applied. The four principles of the facticity model have been applied to the collected data. The facticity model principles placed the text of the media discourse on climate change as absolute truth, certain, uncertain, and absolute falsehood. Finally, the result has been extensively discussed under the framework of the facticity model. The data has been presented in bar charts, tables, and line charts.

The fifth chapter provides the findings and results gathered from the extensive analyses of the media discourse data. Further, it provides the study conclusion and the recommendations of the study, which may provide the basis for future researchers.

CHAPTER 2

LITERATURE REVIEW

The construction of facts using linguistic features/devices to deceive the world brings harm to people as well as to the ecosystem. Humans are part of this ecosystem; therefore, we need to care for other species living with us. To get an accurate and neutral analysis, one must know all the pros and cons of the task. Therefore, the study adds data of the core terms and related to the topic in the following sections.

2.1 Fact Construction Theory

“Truth is Stranger than Fiction”

Potter (1996), who coined the phrase "truth is stranger than fiction," wrote in his book *Representing Reality, Discourse, Rhetoric, and Social Construction* that reality is stranger than fiction. However, the concerns highlighted in this book imply that there is no clear distinction between fact and fiction tropes. Frequently, the resources utilised to create vivid and realistic fictions are the same ones used to create genuine truths. This raises a slew of intriguing fears concerning the connections between literary representations and representational behaviours in settings as diverse as courtrooms and everyday conversation. He looked at a variety of categories and theories that could aid in the construction of reality or facticity. He spoke on the social study of science, and how, when viewed in this light, science becomes a "hard case" against which to evaluate an argument. Facts have long been a fundamental focus for ethnomethodological investigation and thinking. Sacks (1963), in one of the earliest ethnomethodological papers, emphasised the importance of self-characterizations in social life. Stories, versions, and representations whose subject is the social world itself abound in the social world. He also listed semiology, post-structuralism, and postmodernism, which all take a different approach to fact production than the viewpoints presented. One of their most distinguishing qualities is a deep scepticism of the assumption that referential language functions by mirroring or mapping reality. To

believe that facts can be verified by looking at a scene 'in the world' is to ignore the truth that they are reliant on something far larger.

The metaphor "the mirror" and "the construction yard" are two of the most fundamental metaphors for fact formation. The collision of two metaphors: the mirror and the construction yard. In the first, a set of things in the world are mirrored onto a smooth surface, although in this case the smooth surface is language rather than glass. In its descriptions, representations, and accounts, language reflects how things are. And, when they travel in the world of human affairs, they may be taken as trustworthy, factual, or literal accounts, or, in the case of misunderstandings or lies, the mirror may blur or distort. This metaphor can be found in stories about science and a variety of other 'mundane' human activities. It is a metaphor that turns descriptions into passive mirrors of reality. They can, like a mirror or a photograph, stand in for that world and be as good as it for a variety of reasons (Sacks, 1963). I agree in part with the mirror metaphor, that what happened was a reflection of that, but my point is that when there is no mirror, there is no reflection, and nonetheless great ideas are expressed in languages. How do those concepts without a reflection come to be? I am still looking for an answer.

When it comes to descriptions, the construction metaphor works on two levels. The first is the notion that descriptions and accounts build the world or at least versions of it. The second is the notion that these descriptions and reports are constructed by themselves. The word "construction" connotes the possibility of assembly, and manufacture, the possibility of various structures as a final product, and the chance of various materials being utilised in the creation. It stresses that descriptions are human behaviours, and that they could have turned out otherwise. The reflection in a mirror can be cleaned and made flat and smooth, but those actions only change the mirror's capacity to passively accept an image. Contrarily, a house is something that people build; it might have three chimneys, a number of windows, or it might not have any chimneys at all and merely have a set of French doors. It might be made of glass, girders, concrete, mud bricks, or mud bricks and could be either very strong or very delicate. This second construction metaphor is perfectly aligned with my research. I formulated the concept that humans first generate ideas, or conviction, as Stibbe put it, and then give those thoughts garments in the form of words provided by the language. And those thoughts could be completely fresh and described for the first time. These

thoughts displayed on paper or equipped with words which might describe it truth, certain, uncertain or falsehood.

Pomerantz (1986) presents two more categories to construct reality, as described by Potter (1996): extrematization and minimization. He claims that when people are trying to justify, blame, or debate a point, they frequently use 'extreme-case' phrases. The use of extreme points on relevant descriptive dimensions is a typical descriptive practice that entails employing such formulations. So, a dress reported to have been damaged by dry cleaners is not just new, it is 'brand new'; a person suggested as a potential friend is not just liked, 'everyone who meets him adores him.' These descriptions are convincing and help to enhance the case by emphasising the dress's value and the potential friend's likeability. This is a pretty common practice. Here is an example that we have already seen: Jimmy is not just a jealous person here; he is an exceedingly jealous person. In Pomerantz's (1986) article, she focuses on modelling terms (for example, every, entirely, never) or comparable words that change descriptions: the accused is not simply innocent, but 'absolutely innocent.' However, descriptions can modify the quantity in different ways to make something appear extreme or minimum or to construct something as good or terrible. I will use two instances to demonstrate various maximum and minimization approaches, the first utilising quantification and the second using specific reference styles. This is one method of constructing reality or fact. Here, Potter (1996) and Pomerantz (1986) use adverbs to raise or decrease the text's facticity, but they do so in a different way and under a different label. Potter (1996) derives three primary notions based on the above analysis: indexicality, reflexivity, and the documentary method of interpretation, which he feels are important in generating facts and establishing a feeling of a natural, stable reality. Potter (1996, p.45) highlights that indexical descriptions are better understood in certain contexts, and that comprehension of indexical descriptions, such as "this flood I think occurred at two o'clock in the morning," is the product of shared mechanisms for producing context meaning. Reflexivity, on the other hand, emphasises that "descriptions are not only about something but also do something; that is, they not only reflect some aspect of the world, but they are also involved in some practical way with that world." Potter's (1996) examination of the documentary style of interpretation plays a critical role in his assertion that persons who develop interpretations and descriptions are inevitably impacted by their expectations, preoccupations, past

experiences, current needs, values, and beliefs. These elements aid the speaker or writer in constructing the truth or reality. As a result, the description is established as neutral, factual, and unaffected by the speaker.

2.2 Arran Stibbe's Model of Facticity

According to Stibbe (2015), in a study regarding climate change Mori (2014) asked respondents in many countries whether they agreed with the statement that the climate change we are currently seeing is primarily the result of human activity. The results showed that 93 percent of respondents in China agreed, compared to 64 percent in the UK and only 54 percent in the US. The bulk of these respondents base their opinions on whether humans are responsible for climate change more on the books they have read than on actual observations of temperature data or ice core samples. Texts have two purposes: they supply claims like "humans cause climate change" and depict these statements as true, inaccurate, certain, or uncertain. Texts can be written, spoken, or visual. In other words, they rate the facticity of world descriptions on a scale from absolute truth to extreme lie, with a variety of ambiguity levels in between. As a result, they have the power to influence readers' beliefs, or the mental narratives that people have about whether depictions of reality are absolute true, certain, uncertain, or false. In its Fifth Assessment Report, the Intergovernmental Panel on Climate Change (IPCC) gives the claim that "people cause climate change" the highest level of credibility:

It is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century (EN13:17).

Because the low level of facticity modal adverb "extremely likely" was employed in place of "unequivocal" or "absolutely certain." If there had been no use of any modals at all, the statement "Human impact has been the dominant factor" would have had even more facticity. On the other side, the following depiction from a US conspiracy theorist is about as far from the truth as one can go:

The notion of anthropogenic climate change is a fraud – the idea that the planet is getting warmer and that human activity is somehow responsible is a pseudo-scientific fraud. It's a big lie, and it's a monstrosity (Webster Tarpley in the film The Obama Deception, ML19:1h:26m).

The vocabulary words "fraud," "pseudo," "lying," and "monstrosity" all reduce the facticity since they are less certain than "theory" or "fact," the adverb "somehow," which communicates implausibility, and the words "notion" and "idea." There are many texts that are circulated in society and have the capacity to influence people's opinions. The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) and the film *The Obama Deception* are only two examples.

The potters' (1996) theory of fact construction is explained and the idea of conviction is introduced by Stibbe (2015). According to Potter (1996), facticity is a combination of social psychology and rhetoric. Facticity, according to him, has more to do with the collection of linguistic techniques used to portray an explanation as if it were factual, neutral, and devoid of the speaker's bias as if it were a matter of course. There was "some aspect of the world mirrored."

Stibbe (2015) defines the term facticity in the following way;

Facticity patterns are clusters of linguistic devices that converge to present descriptions as certain or true or to undermine descriptions as uncertain or false.

Conviction is a story in people's minds about whether a particular description is true, certain, uncertain, or false.

According to Stibbe (2015), a person first develops a conviction-inspiring thought in his head. After being expressed in words, the notion turns into a fact. Facticity is a pattern in which he uses linguistic clusters to concretize a notion. In this case, Stibbe (2015) differs from the plotter in terms of construction. Stibbe goes even further and adds a belief because, in order to construct facts, one must first form a concept in one's head, which must then be materialised using language features and clusters.

Techniques for studying the linguistic features that create facticity have been developed by critical discourse analysis (CDA). According to Stibbe (2015), these linguistic features include:

1. Modal verbs that express the likelihood of a description, such as "may," "should," and "must" (Martin & Rose, 2003);
2. The consensus of the authority and the expert authority's judgement (Van Leeuwen, 2008);

3. Quantifiers like "some" or "many," which can be employed to gloss over the absence of genuine evidence;
4. Hedges that frequently serve to cast doubt on what other people consider to be true, such as "X thinks" or "X believes" (Machin & Mayr, 2012); and
5. Instead of constructing descriptions as "now at issue or available for discussion," presuppositions construct them as "taken-for-granted" (Martin & White, 2005).

Richardson (2007) provides a useful definition of modality as the level of commitment a speaker or writer has to the claim they are making. Modality can range from low commitment (using the modals "possibly" or "probably") to high commitment (using the adverb "certain" or clearly stating that "X is the case"). Ecolinguistics has explored facticity patterns, notably in relation to climate change, which is unquestionably a significant topic in terms of the breadth and depth of the debate as well as its social and ecological implications. However, several areas have also been investigated. A British Nuclear Fuels brochure features two unique "voices": one from the nuclear business and the other from environmentalists, according to Harré et al. (1999). They learn that the voices of environmentalists are portrayed as unreliable, overconfident, and lacking the authority to make claims based on solid scientific evidence. On the other side, the nuclear industry is presented as having "an unassailable right to make predictions and to be believed. Concerning the risks and future of nuclear power, one voice has the right to speak; the other does not.

There are two common ways to dispute the validity of environmental claims. In the first method, environmentalists are portrayed as being unreliable, unscientific, and untrustworthy. The second one presents them as reliable but selectively uses quotes from current or past environmentalists who support the viewpoint being promoted. According to reports, George Monbiot said that the only practical low-carbon energy option we have is nuclear power. The commentators are not just individuals voicing their thoughts using opposition; rather, they are advocates for environmentalism, the Environment Agency, Greenpeace, and the Green Party, in that order (i.e., the placing of a noun phrase stating their position immediately after their name).

Alexander (2008) looks at how the anti-green movement and its "friends" utilise words to shape reality in another study. The vast network of industry-funded conservative think groups related to environmental scepticism is described by

Alexander (2008). He describes how these groups use simulated rationality, which entails the use of scientific terminology, hand-picked facts, and numbers to produce explanations that appear sensible to an untrained audience but are not supported by actual evidence (Alexander, 2008). When their activist phase is over, he shows how polluting firms integrate former Greenpeace members by giving them the chance to rise to positions of prestige and influence. The anti-green movement can use these activists to bolster the credibility of their environmental claims by feigning support from environmentalists. Another element Alexander (2008) discusses is the anti-green movement's use of vague, abstract, and positive phrases like common sense, commitment, innovation, and scientific to gain support without giving evidence. The movement, on the other hand, utilises derogatory terms to label opponents, such as 'nimby' or 'ecoterrorist,' thus 'belittling their position.'

2.2.1 Fake Information or Distorted facts in the Language

During the U.S. invasion of Vietnam in 1965, high officials purposefully distorted or concealed evidence from Congress and the wider public. Secretary of Defense McNamara made a deliberate attempt to skew the evidence and mislead Congress (Schuessler, 2015). However, both Secretary of Defense Robert McNamara and President Lyndon B. Johnson were convinced of the second attack's authenticity, and they asked Congress to enact the Gulf of Tonkin Resolution. Secretary Powell's U.N. speech (Saddam Hussein) recently authorised his field commander to employ (chemical weapons).

So many facticity linguistics tactics were employed to persuade the world that the Iraq invasion was correct. The words "has authorised" and "to use (chemical weapons)" are included in the Secretary of State's address to assure the public that the report is based on facts, but the truth was quite different.

DeYoung and Ryan (2021) Washington Post reports:

*"Every statement I make today is backed up by sources, solid sources," Powell said in his address, which occurred just weeks before the invasion began. "These are not assertions. **What we are giving you are facts and conclusions based on solid intelligence.**" Powell's presentation to U.N. Security Council Feb 2003.*

*Later in 2005, he came up with facts and said, "So that's it; it's the **blot** on my record. I don't think we would have had **the basis** to go to war."*

Alexander (2008) investigates the ways in which the anti-green movement and its "allies" change the world through words. It is known as the vast network of conservative think tanks engaged in environmental scepticism that are supported by industry. He explains how these organisations employ "simulated rationality," which is the use of scientific terminology, hand-picked facts, and numbers to present arguments that are "plausibly rational to an inexperienced audience" but are not supported by concrete evidence (Stibbe, 2015). A big firm will hire a scientist to explain the terminology when they are utilised to fabricate a fact.

2.2.2 Destruction of Fake Information or Distorted Facts

Total forest land declined from 3.4% to 2.6% in ten years during the Afghanistan war (UNOCA, 1991). According to the Government of the Republic of Afghanistan (GRA, 1992), the war damaged around 43,000 hectares of fruit orchards, three million agricultural implements, further, explained by Formoli (1995) in the article titled: *Impacts of the Afghan–Soviet war on Afghanistan's environment*, and 3,000 irrigation systems. Formoli (1995) analysed the effects of the Afghan-Soviet war on Afghanistan's ecology. The same source claims that the conflict resulted in the deaths of 9.5 million sheep and goats, or more than half of their population. The irrigation system was deliberately damaged during the Afghan-Soviet conflict (Skogland, 1988). Throughout the war, there was constant destruction. An estimated 27 to 36% of all irrigation systems suffered damage directly from the war (UNDP, 1993c).

Explosive weapons, herbicides (dioxins like agent orange), and field clearance operations employing specialised bulldozers known as "Rome Ploughs" were the three military activities that most significantly altered the physical environment of Vietnam (Hupy, 2008). Following the aircraft bombardment, forestry experts and ecologists compared the environment in Vietnam to a moonscape of craters and burned ground.

According to their theory, the soil may undergo a process known as lateralization after losing its sheltering forest cover, which turns exposed soils into dry, rock-like laterite. Herbicides, often known as the agent's orange, white, and blue, were widely applied primarily for the aim of clearing large areas of forest vegetation. Unfortunately, the herbicides' chemicals also killed the people who lived in the forests, including US soldiers and rural peasants, in addition to the plants they were intended to destroy. It was estimated that 1.65 million hectares of forest had been destroyed. Vietnam saw the use of 19 million litres of herbicide to clear its forests (Hupy, 2008).

Without leaving a crater, the Daisy Cutter bomb carved out a large landing zone from the forest that was roughly the size of a football field. To burn down more than 30,000 hectares of tropical forest in Vietnam, "Operation Sherwood Forest" was started in 1965. (Hupy, 2008).

2.3 Climate Change Impacts on Pakistan

Climate change is having visible effects on Pakistan, particularly due to global warming, and these effects are expected to become more intense in the future (Shahvari et al., 2019). Developing countries such as Pakistan, India, and Bangladesh are experiencing relatively severe impacts of climate change due to factors such as limited awareness and knowledge about effective measures, institutional capacity deficiencies, inappropriate resource utilization, and poor economic conditions (Rahman & Lateh, 2017; Ullah et al., 2019).

Temperature in Pakistan has risen by 0.4 °C from 1895 to 1995, resulting in severe weather conditions such as heat waves and hotter days and nights (Meehl & Tebaldi, 2004; Rauf et al., 2017). Pakistan is facing hydrological reserve shrinkage, rapid glacier melting, floods, and droughts due to climate change (Chaudhry et al., 2009). It is projected that Pakistan's temperature will increase by 0.9 to 1.5 °C between 2020 and 2050 (Hussain & Mumtaz, 2014). The country experienced severe droughts in 1998 and 2004, with the worst affected province being Balochistan, where 84% of the population was directly affected and 76% of livestock perished (Hussain & Mumtaz, 2014).

Pakistan has also suffered greatly from massive floods, which displaced a large number of people in its northern and central parts (Chang, 2014; Ullah et al., 2018). The country is likely to continue experiencing sizzling temperature, severe droughts, pest diseases, health-related problems, and lifestyle changes in the coming years (Hussain et al., 2018).

Agricultural countries like Pakistan, with a low per capita income and inadequate capacity building, are expected to face destructive effects of climate change (Balkhair et al., 2018). Pakistan's economy is heavily dependent on agriculture, which accounts for 80% of the country's exports and has large irrigable land (World Bank, 2013). Two-thirds of Pakistan's irrigable land's water supply comes from northern snowfalls and

melting glaciers. Additionally, two-thirds of the population is employed in the agriculture sector, but Pakistan still lacks adequate infrastructure to mitigate and adapt to the effects of climate change (World Bank, 2013).

Pakistan's location, heavy reliance on agriculture, high dependence on water resources, and low capacity to cope with climatic emergencies make it highly vulnerable to the effects of climate change (Balkhair et al., 2018; Malik et al., 2012).

2.4 Lexical Categories

According to (Robins 1989, p. 39) One of the earliest linguistic findings is the categorization of words into separate groups or "parts of speech," with a history that dates at least to the (cited in Baker 2003). Dionysius understood that although certain words (onoma, alias nouns) took on case inflections, others (rhema, alias verbs), took on tense and person inflections. This morphological distinction was related to the division between nouns and verbs, which denoted tangible or abstract entities and activities or processes, respectively.

There are two famous categories of approaches. The first is the morphological approach of Greek and Roman grammarians. It stands out that some roots adopt one class of inflections while others take a different class, especially in well-inflected languages (Baker & Baker 2003). Baker and Baker (2003) claim that Marantz (1997) and the other distributed morphologists, have recently endorsed the second viewpoint. According to these theories, a category's syntactic environment determines its categorical identity. My research favours the second strategy since the semantics of the lexical categories are determined by syntax.

According to Sinclair (1970), a lexical category is a linguistic unit that denotes a particular area of meaning and has a characteristic pattern of co-occurrence with other lexical categories. Candidates include homographs, morphemes, paradigmatically related words (such as kick, kicks, kicking, kicked), syntagmatically related words (such as run to seed), and multiherbal categories (such as idioms). Later, Sinclair (2004) writes, "Single words chosen on open-choice principles, leaving no proof of their use, are examples of the limiting case of the lexical category." Thus, Sinclair (1984) regarded lexicography as a viable form of linguistic description at the lexical level.

Researchers and academics classify lexical objects in a variety of ways. This research focuses on the elaboration of lexical elements. The following word classes are lexical categories.

- All nouns, including proper and common nouns. A compound noun with a hyphen is handled as a single lexical category, but a compound noun without a hyphen is split into two lexical categories,
- All lexical verbs, apart from the word *be*. A phrasal verb (consist of) is divided into two lexical categories: *consist* and *for*,
- Adjectives in general. A compound adjective is treated as though it were a single lexical unit,
- Adverbs of some sort. Manner adverbs (for example, *fast*) and sentence adverbs (e.g., *fortunately*, *honestly*).

2.4.1. Lexical Category of Nouns

Starting with Stuart (2012), a noun-driven representation has been developed. Because the structure connects all nouns from the root, a parallelized meaning-scaffolding programme can start from a variety of places and gradually converge on an intermediate structure (towards a model of the meaning) as it traverses the nodes shared by noun-rooted subsets.

2.4.1.1 Nominalization

Academic and scientific writing is characterised by normalisation (Halliday and Matthiessen, 2014). Aside from lexical density, nominalization is another factor that contributes to the written text's linguistic complexity. Martin (2008) describes nominalization as "a grammatical resource for deriving nouns from other word classes," among other definitions. "Nominalisation" refers to the procedure of nouns that are derived from other groups of words (Thomson & Droga, 2012). Nominalisation, according to Eggins (1994), is the process of "changing things that aren't ordinarily nouns into nouns."

Nominalisation can be divided into two forms based on the functional approach: verbal and adjectival. As shown in the table below, Quirk et al. developed a taxonomy of nominal endings, which was noted in Ravelli (1999):

Table 2.1*Taxonomy of Nominal Endings*

-suffix	Quirk's description	Examples	
-ment	Verb	Chiefly abstract noun	Appointment, settlement
-ion	Verb	Abstract and collective nouns	Perception, suspicion
-ation	Verb	Abstract and collective nouns	Concentration, verification
-ing	Verb	Abstract and concrete nouns	Reading, warning
-ity/-ty	Adjective	Abstract nouns	Capacity, ability, priority
-ance	Adjective	Abstract nouns	Assurance, importance

In the book *Spoken and Written Language*, Halliday (1989) asserts that lexical density affects the written language's complexity and that speech and writing have various degrees of complexity. According to the study's authors, "lexical density will be assessed as several lexical categories per clause", and "the notion of 'density' is a type of complexity that happens in the deployment of words" (Halliday, 1989). It is unmistakably asserted that lexical density increases linguistic complexity. Halliday (1989) compares the lexical density of spoken and written language. The lexical density of written English is often thought to be higher than spoken English. According to Christie and Derewianka (2010), "in the discussion, we prefer to deploy fewer lexical words - generally because there is no need to identify anything if we can perceive it in the surroundings." Because we need to develop the information through language, we prefer to employ more lexical components when writing. Writing becomes more lexically complex as a result (Halliday & Martin, 2003).

To calculate lexical density, Ure (1971) was the first to suggest utilising the ratio of lexical categories to total running words. In a report she delivered at a conference in Cambridge in 1971, she investigated and contrasted the lexical density in spoken and written language. She found that spoken language has a lexical density of less than

40%, according to the formula presented by Ure in her study. In comparison, written language has more than 40% lexical density. Halliday offered a different way to calculate lexical density. According to Halliday (1985), lexical density can be calculated by dividing the total number of sentences by the total number of lexical categories. Furthermore, lexical complexity makes language complex, rendering it ambiguous or incorrect.

2.4.2. Lexical Category Modal of Verbs

The verb category, which communicates the speaker's relationship to the situation and reality, is frequently confused with the category of mood. In other words, the mood category represents how the speaker, in his or her own subjective opinion, perceives the reality or unreality of the circumstance. There is much controversy over the mood category in the modern English verb. It is regarded as the conflict-ridden of the verb's categories and has had several treatments. Some linguists agree that, given the complexity of the category, it seems complicated to draw any distinct and widely accepted conclusions about it (Ilyish, 1971).

2.4.2.1 Modality in Logic and Linguistics

There may be misunderstandings about logical and linguistic modalities because the word "modality" is used in various disciplines, including logic and linguistics. According to modal logic, a proposition's relationship to objective reality depends on its mode of existence (possibility, factuality, necessity, or whether it is true or false) and whether it is true or false. The idea of modality in linguistics is ambiguous and open to several interpretations. Thus, the speaker's asserted link between reality and unreality is represented by the functional-semantic (notional) category known as a linguistic modality.

Modality in linguistics differs from modality in logic since it is speaker-oriented. For example, the line "Chelyabinsk is Russia's capital" has a non-factual (unreal) modality in logic because the proposition is incorrect. In linguistics, the same statement presents the situation as a fact from the speaker's point of view, indicating that the modality is reality.

It is important to emphasise that linguistics has no set of linguistic tools to represent the truth or falsity of utterances, which can only be demonstrated experimentally, that is, through experimentation. Once again, I want to emphasise that

linguistic modality has to do with how the speaker perceives reality and unreality. In this perspective, fiction—novels, stories, science fiction, etc.—relates to linguistic reality even though these works' characters may never have existed in real life.

2.4.2.2 Linguistic Modality: A Semantic Scope

The linguistic modality is seen as a synthesis of reality and unreality to return to the topic. Modality of reality and modality of unreality refer to situations the speaker understands as facts of reality and non-facts, respectively. Think about the following example: The current day is Tuesday. Since Romeo and Juliet were in love, I wish it were Sunday Today (facts - mode of reality). If it were Sunday, I would not go to school. Get my things for me! (The dean asked everyone to show up for the meeting.) He might come. He might be able to help us; who knows? (non-facts - modality of unreality). As evidenced by the examples above, the mode does not meaningfully relate to the verb alone but rather to the complete phrase (Jespersen, 1992). Additionally, several semantic scopes and techniques convey unreality (Khomutova, 1985). As a result, the semantics of unreality are expressed using three categories of modality:

- 1) non-factual modalities, such as "I wish it were Sunday today." I would not go to school Today if it were Sunday;
- 2) Suppositional modality, e.g. He might come;
- 3) Inducement modality, e.g., grab my things! (The dean requested) that everyone is present at the conference. Perhaps he can assist us.

Let us look at each semantic form of modality one by one. Non-factual modality is an implicit denial of the situation's actuality, e.g. Today makes me wish it was Sunday. Today is not Sunday. The term "modality of inducement" refers to the difference between direct and indirect incentives to undertake an action, such as "Go grab my things!" (The dean urged) that everyone attends the conference. Suppositional modality describes plausible or likely scenarios from the speaker's perspective, such as He might come. Perhaps he can assist us.

The semantic root of the following semantic categories of unreal modality is the same: they all characterise the circumstance as a non-fact from the speaker's perspective. Thus, linguistic modality is an antithesis of reality and unreality in terms

of meaning. Reality has a lot of meaning to it. Non-factuality, inducement, and presumption are all part of the definition of unreality.

2.4.2.3 Linguistic Modality: A Means of Expression

It is an example of a Mood morphological category, which is one of a complicated system of several ways used to convey verbal modality in terms of form. I would love to be you. Stop doing it! If I lived in London, I would speak English daily, for instance, in the tenses and phases. If he had known about the event, he would have gone. Modal verb combinations with the infinitive include may/might, can/could, must, should, will/would, ought to, and so on. Do not keep yourself up all night waiting for me since I might be late. I can take care of myself if something goes wrong. The doorman was most likely bribed.

Possibly, possibly, and other modal words are examples of lexical meaning. He might be troubled and looking for guidance. You might be surprised to learn that I do not speak through a hat. Other modal semantics terms (nouns, adjectives, and verbs) that initiate dependent clauses and serve as predictors include "want," "it is time," "likely," "probable," "opportunity," and "possibility," for example Now is the moment for us to begin. Numerous things will probably alter in this area. The rooms on the second story have probably been cooled by now.

Other syntactic structures of sentences and subordinate clauses, such as imperative sentences, clauses introduced by the conjunctions as if and as though, conditional clauses, Etc. Rest easy and have fun! She often gives the impression that she is not there. If we were everyone to look like our genuine selves, the earth would be uninhabitable. As we have seen, many modality-related traits are conveyed either lexically, syntactically, or both rather than morphologically. We must deal with a heterogeneous set of modalities in this case. The mood is merely one of the morphological expressions of the functional-semantic concept of modality.

2.4.3. Lexical Category of Adverbs

Some English adverbs show the speaker's belief in the proposition's veracity. The adverbs really, in fact, truly, and really all have a semantic basis that reflects this commitment by referring to acts, facts, truth, and reality. These adverbs have also developed different pragmatic meanings in modern English, according to synchronic and diachronic studies. Most of these studies are monolingual and concentrate on a

single adverb. There are rarely detailed intralingual comparisons (Smith and Jucker 2000), and crosslinguistic comparisons are rare exceptions include (Aijmer and Simon Vandenberg 2004; Willems and Demol, 2006). However, existing research demonstrates how the semantic and pragmatic meanings of adverbs overlap.

2.4.3.1 Types of Adverbs

According to Swan (2005), adverbs have the following types, which have a deep and unique connection to the construction of reality or truth or fact.

1. Evaluative adverbs, such as unfortunately, strangely, and curiously, belong to a tiny but fascinating group of adverbs. Evaluative adverbs have three characteristics that distinguish them from other, more well-studied adverb groups. To begin with, evaluations are veridical: a simple declarative sentence containing an evaluative entail the corresponding sentence without the evaluative in a systematic way. Second, evaluations are non-opaque: in their scope, co-referring expressions can be substituted. Finally, evaluations are scopal: they take part in scope ambiguities based on their syntactic position.

2. Veridicality

John is unfortunately already gone.'

'John is already gone.'

Non-opacity

'Marie is the new boss. Unfortunately, Paul criticised Marie.'

'Unfortunately, Paul criticised the new boss.'

3. 'Fortunately, Paul came yesterday.'

Scopal character

4. 'Yesterday, Paul fortunately came.'

5. Indefinite Frequency Adverbs

Always, ever, usually, often, frequently. Rarely, and never.

1. Adverb of certainty

Probably, certainly, clearly, obviously

2. Adverbs of completeness

Almost, nearly, practically

3. Adverbs of Manner

Slowly, suddenly, quietly, softly.

The two ideas are identified by Simon-Vandenberg and Aijmer (2007) along with two other categories: speech-act adverbs and expectation adverbs, in their cross-linguistic study of adverbs signifying certainty. Their categorisation is summarised as follows:

1. Adverbs that emphasise the speaker's evaluation of the veracity of the truth, or epistemic adverbs: unquestionably, definitely, undoubtedly, indeed, surely, clearly, for sure, for certain, assuredly, indubitably,
2. Adverbs that convey certainty based on the evidence at hand are known as evidential adverbs and include clearly, evidently, manifestly, obviously, patently, plainly,
3. Expectation-related adverbs: adverbs like "of course," "inevitably," "naturally," and "necessarily" link the speaker's expectations to another thing or the current circumstance.
4. Adverbs that refer to possible speaking acts include "avowedly," "admittingly," "arguably," "incontestably," "indisputably," "unarguably," "unquestionably," and "undeniably."

Because it shows that there are distinct subcategories of adverbs expressing the speaker's knowledge within the larger category, Simon-Vandenberg and Aijmer's (2007) taxonomy is helpful. Pión (2013) outlines three characteristics that should be considered when studying speech-act adverbs in his work *Speech-act adverbs as way adverbs*.

- (1) happily, unfortunately, evidently, probably, frankly, truthfully, truthfully (,) Frankly (,) John lied to Bill.
- (2) frankly, sincerely, honestly, truthfully, briefly, precisely, roughly, approximately, etc.
- (3) Sincerely, I apologise for being so rude, briefly, I promise you to finish my work today.

The first is that speech-act adverbs make sentences performative as opposed to constative. For instance, a listener could simply protest to the (unmodified) allegation that Facebook is overrated; they could not disagree with the entire statement by saying, "No, that's not true."

The second characteristic is known as "factivity," which refers to the fact that when a speech-act adverb is used with a declarative sentence, it is thought that the speaker is stating the notion implied by the unchanged clause. For instance, if Rebecca says, it is likely that the listener will disagree with her because she is implying that Facebook is overrated. Factivity is typically defined as a relationship between propositions (where the truth of one implies the truth of another). However, in the case of speech-act adverbs, this definition might not be as applicable because a sentence with a speech-act adverb and a declarative clause might not have the same truth value as a regular declarative sentence.

2.5 Baker Concordance Model

The power of media discourse holders exercises this power depending on systematic tendencies in news reporting and other media activities (Fairclough, 1989). Baker (2006) says that media people have their own discourse and have the power to reshape the existing one. According to Hall et al. (1978, p. 58), certain discourses are influenced by a concept known as "hierarchy credibility," in which powerful and privileged individuals are seen as having greater access to accurate information and are therefore considered the primary definers of topics, often referred to as "spokesmen." Newspapers' articles are the easiest text type to collect. Moreover, newspaper data is a more useful area for producing and reproducing discourses (Baker, 2006).

A concordance, according to Baker (2006), is only a list of every occurrence of a certain search phrase in a corpus that is provided in the context in which it appears, frequently a few words to the left and right of the keyword. Concordance research is done in addition to the analysis of newly developed key lexicons and lexical trends. Examples of a word or group in the analyst's direct co-text are provided in concordance (Baker, 2006). The entire document can be subjected to the matching rules, and the researcher can set the normal number of words on either side of the word/emphasis group to suit their needs. As a result, concordance is one of the most qualitative types of corpus linguistics analysis. Correlation lines can also be ordered in different ways to

help the analyst examine multiple patterns of the same word or group. Concordance research allows you to look at language features in the co-text, considering the meaning that the analyst knows and can infer from the co-text. So, it is not surprising that it is the only Corpus Linguistics method that discourse analysts feel comfortable with. This suggests that Corpus Linguistics is not familiar with 'qualitative' research. In addition, since concordance analysis examines a predetermined number of concordance lines, the results can be categorised (e.g., Topoi associated with a particular word or group) and quantified in absolute and relative terms to identify potential trends.

Later, Sinclair (1984, pp.81-94) praised computers' capacity for organising voluminous textual evidence, as did Baker (2006). The preservation and scanning of very long texts offer a nearly objective foundation for the study of linguistic patterns. He claims that "The selection process becomes a selection of texts for the corpus, not examples for a dictionary" as the technical issues with building sizable electronic corpora are increasingly handled. Once a text is chosen to be included, all the terms' occurrences together make up the proof. He is very pleased with the new technology and says that concordances can provide evidence about language that is far superior to any other way once lexicography fully utilises this information.

2.6 Construction of Reality

Halliday (2001) presents a new dimension to reality; in his view, language does not passively reflect reality; language actively creates reality. My take on this idea is that language is only a means of conveying one mind; it is our brains that create reality, but some realities are fixed, and those fixed realities are here on Earth with the migration of people from heaven. These solid realities are called universal truths. Grammar today refers to grammar plus vocabulary, blurring the line between the two, and it is this grammar that shapes experience and gives meaning to what we perceive. He emphasises that language determines our perception of meanings and that language has part of the function that is grammar. Here I have an argumentative position to Halliday (2001) because sometimes our thought determines the language and, in both cases.

He continues with his argument that language has evolved through the process and as a means of interpreting reality and that reality cannot be prefabricated or understood. Language is not a superstructure built on a foundation; rather, it is the result

of the mutual influence of the conscious and the material, of the opposition between our conscious and material selves as diametrically opposed domains of experience. The ability of language to shape our consciousness is because it gives each human child the framework by which to understand and influence their environment. This understanding conflicts with universal grammatical facts, showing that language does not have the ability to influence our consciousness.

The raw materials of universal rules of language that are present in the mind of man. Now the brain starts the process and manipulates the language. Our consciousness has the power to shape language. And it is a mind that clothed its ideas with the help of language. Language gives the consciousness of beautiful clothes that others think are beautiful, but the reality is the adversary.

2.7 Grammar's Role in Meaning Construction

Halliday (2001) says that grammar interprets reality according to the prevailing means of production and relations of production - or what we mistakenly call "production," and I agree with him on this reality. As proponents of structuralism argue that there is no single reality but plurality, and I am talking about fixed and simple reality that does not change with time. The main organ is the mind, which controls everything, and the mind has the power to interpret reality.

He further builds on his idea that grammar and meanings are not constant; they evolved through different forms at different times and places. The meaning-making potential of language - grammar, in our current sense of the term - has evolved with it. Nor has it been the same throughout human history. Here I partially agree with him as certain concepts and words have never changed throughout history, and they are "rape", "cruelty", "woman", "children are innocent", and many more. Rape was and is considered an inhuman act, cruelty does not change its meaning, even from the beginning of human history, and children have always been and are innocent, never changed, and never will ever change. Therefore, we need to resolve some realities for the betterment and peace of man on Earth. My view is supported by the U.N. Universal Declaration of Fundamental Human Rights Articles:

1. All people are born free, with an equal sense of dignity and rights.

2. Without discrimination of any type, including race, colour, sex, language, religion, political opinion, national or social origin, property, birth, or other position, everyone is entitled to all the rights and freedoms contained in this Declaration.

3. Everyone is entitled to life, liberty, and personal security.

4. No one shall be subjected to slavery or servitude, and all forms of slavery and the slave trade shall be outlawed.

5. Cruel, inhuman, or degrading treatment or punishment, including torture, is prohibited. These articles are the basic human reality observed throughout the history of humankind. The last speech of the Prophet Muhammad (P.B.U.H.) was considered the first declared human rights law.

2.8 Usage of Language for Distortion of History

The language was and is used as a deadly weapon to achieve success, and for that purpose, some orators were hired to convince the opponents by using sugar-coated words. The art of language was and still is used to make one point correct and acceptable, although that point may be far from reality. Distortion of history is a blatant example of language pollution. As a result of that rebellion, many wars have been fought, and millions of people have been killed, along with other species.

We, humans, are unique beings because of our brains, which is why we consider ourselves superior to other species. That brain gives us an edge in ruling over the species or even humans. Power and sugar-coated words always provide a clear path for the cruel and destroyers. History is full of examples of that cruelty that harms not only humans but our ecosystem as well.

Halliday (2001, pp. 175-202) puts it this way: "language is at the same time a part of reality, a designer of reality and a metaphor for reality. These types of people and their research are damaging the ecosystem. How does language shape reality? If so, the lie has given a name, "a shaper of reality. Language shapes reality as the primary cause of pollution on Earth, and that idea brings destruction to humans and the ecosystem. Powerful and eloquent people rule the world, of course, because of language. Through language, they can create, destroy, and redesign reality. This idea must be abandoned if we want to save our ecosystem.

Halliday (2001) uses language-specific grammatical synonyms. Thus, once a language or grammar has been developed, it actively contributes to the structuring of historical processes, especially those that determine the means of production and relations of production. First, it creates the social interactions associated with material practices and allows individuals to coordinate them as part of reality. Second, while it allows these forms to change, it also limits its ability to change into other forms in its role as the "builder" of reality. It also contains all the current contradictions and complementarities, both those within the material and socio-economic domain and those inherent in the impact that language produced in the first place, that between the material and the conscious domain. However, this guarantees that the forms will evolve because the grammar can never be fixed or monolithic.

It is true that reality was and is hijacked by the elite learned class. He asserts that reality has been reinterpreted in the learned bureaucratic and technological way that we are all so used to today. It states, for example, that we seek the opportunity for air and ground forces to take the early initiative in offensive action to achieve the end of the battle on our terms. He expresses the wish that at this point "everyone's worldview is the same, just to defend ourselves against a ridiculous accusation of bias by those who cannot tell the difference between 'different from' and better (or worse than). If this happens, I bet there will be peace, tranquillity, and equity everywhere.

This study backed the viewpoint of scientists that it is the language that distorts reality, regardless of whether it is scientific or natural. I want to mention that all languages evolved from natural language, so the mother language distributes all features to her daughters. Even though I go one step further, language has nothing to do with reality, but it is human, the language manipulators who distort the realities. I strongly disagree with Halliday (2001) that spoken language is still a constructed reality, even though it may be less artificial, less rigid, and more determined than written language. Spoken language distorts reality more than written language.

It completely rules out the concept of Gaia - of the Earth itself as a conscious being (Lovelock, 2003). He blames grammar, but it is humans making it difficult for us to accept planet earth as a living being that not only breathes but feels and even thinks: that maintains its body temperature despite massive changes in the human body. Heat it receives from the sun, which slowly but inevitably dies as each of the living species that compose it is destroyed. In any case, let us try to rewrite that last description: The

Earth as a living being that maintains its body temperature despite tremendous changes in the heat it receives from the sun and which slowly but inevitably dies, as each of the living species from which it exists is destroyed. Lovelock (2003) said, we must choose male or female, and Gaia was a goddess, the mother earth. Our language has all the semantics, lexical or syntax to describe the Earth as a living being. The only flaw we have is diligence, dedication, and acceptance of the single reality.

Halliday (2001) suggested that the things that can rule out this possibility and that we have brought about ourselves - classism, growth, destruction of species, pollution, and the like - are not only problems for biologists and physicists. They are also problems for the applied language community. I am not suggesting for a moment that we hold the key. But we should be able to write the instructions for how to use it. (Halliday, 1990, 2001) I fully support this statement that it is applied linguistics, or I should say eco-linguistics, that gives ladders for all other disciplines to rise. Without linguistics, no discipline can stand and solve problems alone. Linguistics is the mother of all disciplines as it is used by everyone as scaffolding.

2.9 Past Work

A few works that cover various facets of the research under investigation are pertinent to this one. They all broadly fall within the term, although none precisely analyse the facticity of the language aspects. I discovered some papers that might elaborate on the fact construction.

In this rainstorm of information, according to Cook (2019), misinformation or distorted facts is the most serious problem in combating climate change. In an article titled "Understanding and fighting misinformation about climate change," he examined many types of misinformation or distorted facts as well as solutions.

1. Refutation of misinformation (refuse language distortion with facts and logical, concrete examples)
2. Inoculation (adopts the vaccination metaphor—just as biological vaccination neutralises viruses by exposing people to a weak form of the virus, misinformation can be neutralised by exposing people to a weak form of misinformation)
3. Agnotology (the study of manufactured ignorance and misinformation)

4. Fact-checking intervention
5. Cherry-picking (involves selectively choosing data that leads to a conclusion different from the conclusion arising from all available data)
6. Logical fallacies (tell people false facts with logic to convince them)
7. Fake experts (employ fake experts to get the scientific authentication about the climate change)
8. Conspiracy theories (about climate change are common, with around 20% of the U.S. public believing that climate change is a scientific hoax (Lewandowsky et al., 2013)).

A study conducted by Farrell (2019) in his article, *The growth of climate change disinformation in U.S. philanthropy: evidence from natural language processing*. In this article, he discusses the links between these two trends that have not been scientifically explored and found in a large body of collected data that reveals new knowledge about large-scale efforts to disrupt public understanding of science and sow polarisation. This study says that people with money use influence to distort information and claim to be a helping hand even when manipulating the facts of scientific experiments. The data from 52,994 individuals and 41,594 organisations collected by Farrell (2019) produced more than 3 million words of data that these individuals and organisations wrote in their publication on climate change. The study shows that the impact of fossil fuel funding continues to play an important role and further describes that the strength of the relationship between the information network and philanthropy is the strongest for people and organisations directly associated with such funding. It means that power and money play a vital role in spreading misinformation about climate change. These two factors can change the varied reality proven as a myth by science.

Another study, conducted by Lewandowsky (2020, pp. 11-13), "Climate change mis/disinformation and how to combat it," listed many factors that could be used to stop climate change mis/disinformation. The factors are; education, correction, inoculation, culturally appropriate messages, consensus messages, debunking, changing attitudes and political objectivity, etc. Before that, he also spoke about the situation that fosters climate change, disinformation such as polarisation, differences in political beliefs, financing of disinformation and lobbying. He reveals the fact that 90% of published

books on climate change are funded by think tanks without having undergone peer review.

Cacciatore's (2021) article, "Misinformation and Public Opinion on Science and Health: Approaches, Findings and Future Directions", concludes that misinformation can be stopped by using different approaches; the best is the (CIE) continuous influence effect. Here, the CIE refers to the tendency for information that is true when initially presented but later inaccurate to continue to affect the memory and reasoning of a person listening. He further explains that the factors appropriate to stop misinformation are warnings, evidence present to fill the gap, recency, primacy, extensive processing and social monitoring, and a host of variables related to media use, literacy, and emotion. All these and many more could be used to minimise the effect of mis / disinformation related to climate change.

2.10 Summary of the Chapter

All these research studies somehow cover the broader fences of the facticity of the text. The articles covered different areas of fact construction in language, some discussed the concept, upbringing, education, society, religion, etc. Some scholars raised the issue of motive behind the construction of facts. However, no such paper may analyse text by examining lexical categories through the lens of facticity. Linguistics patterns have many features which may determine the facticity of the text. The theories of construction do not cover it because there is a lack of thinking. Stibbe (2015) first used conviction which means to plan, then arrange the strings of words in such a way that the statement becomes true, false, certain, or uncertain. Therefore, media language regarding climate change is first investigated linguistically by lexical categories using the facticity model.

CHAPTER 3

RESEARCH METHODOLOGY

The chapter includes an introduction and a comprehensive discussion of the fundamental concepts and key terms specific to climate change in media discourse, with a focus on the facticity of linguistic features. It also discusses the model developed by Stibbe (2015), as well as the research design, including the nature of the study, tools and techniques used for data collection, and the techniques and procedures for analysing the collected data.

3.1 Theoretical Framework

The theoretical framework comprises many concepts pertinent to the research theories. It supports the illumination of ideas that are extremely relevant to the study and relates to the more comprehensive facets of information being examined (Davis, 1995). An essential idea that benefits the investigation in numerous ways is a theoretical framework. It gives researchers access to knowledge that is already available and serves as a foundation for the research method they choose. Addressing research questions and considering how and why inquiries are beneficial by allowing intellectual transitions to characterize a phenomenon through various study-related elements (Grosz, Weinstein, & Joshi, 1995).

In this study, the fact construction theory of Potter (1996) provides a theoretical framework. Potter (1996) describes three methods crucial for constructing fact: indexicality, Reflexivity, and the documentary method of interpretation, which he believes are crucial in constructing facts and establishing a sense of natural, stable reality. Potter (1996) emphasises that indexical descriptions are best understood only in specific contexts. Reflexivity, on the other hand, emphasises the fact that descriptions are not only about something but also do something; that is, they not only represent some facets of the world, but they are also involved in some practical way with that world. Potter's (1996) investigation of the documentary method of interpretation occupies a crucial position in his argument that the construction of facts is inevitably influenced by the expectations, preoccupations, past experiences, and current needs, values, and beliefs of those who construct interpretations and descriptions. These

factors help the speaker or writer construct reality or fact. Moreover, the description would be established as neutral, factual, and independent of the speaker.

3.1.1 Rationale of the Research Theory

The use of Potter's (1996) fact construction theory is more aligned with this study, although Halliday's (2001) Systemic Functional Grammar also covers similar ground. However, Halliday does not discuss the role of language in shaping reality, and he opposes the cognitive factor construction theory, which is the basis of this study. This research is focused on the cognitive ability to shape linguistic features to present falsehood with facticity linguistic tools. Stibbe (2015), the author of the facticity model used in this study, has also discussed Potter's fact construction theory and concluded that it is more closely aligned with his model. Both theories have provided principles for measuring facticity. Potter (1996) suggests that text can be neutral, factual, or independent, while Stibbe (2015) provides four principles for judging text: absolute truth, certainty, uncertainty, and absolute falsehood.

3.2 Analytical Framework

An analytical framework explains the method or model through which the result is derived. To analyse the data with one or more than one model under the framework of theory is used. Baker's (2006) model of concordance is used to extract the lexical categories from the media discourse. Stibbe's (2015) facticity model provides an analytical framework that looks at the linguistics features and analyses the data ranging from absolute truth to absolute falsehood, with varying degrees of certainty and uncertainty.

3.1.2.1 Framework (modified) for Data Analysis

Stibbe (2015) used the facticity model for the first time in his book to reveal the methods by which one can construct truth. He uses five linguistic features through which a writer or speaker constructs the fact: 1: modals, 2. Call for expert authority, 3. Quantifiers, 4. Hedges and 5. Presuppositions. These linguistics devices do not cover my study except for one, i.e., modal verbs. Therefore, I have made some changes to the model. I adapted the facticity model, use modal verbs, and added nouns and adverbs. I placed modal verbs into verbs because a modal verb is part of a verb. Additionally, I indexed these lexical categories among four principles of the facticity model, i.e.,

absolute truth, certain, uncertain, and absolute falsehood. I have distributed the modal verbs, adverbs, and nouns in the four principles of the facticity model, e.g.

Nouns: proper nouns, with the strong base verb, active voice- absolute truth

Helping verbs, progressive verbs with common nouns or pronouns-
certain

Passive voice, no subject, weak verbs- uncertain (see section 4.6.1)

Modal Verbs: have to, must- absolute truth,

Can, could, should- certain

May, might- uncertain (see section 4.6.2)

Adverb: genuinely, clearly- absolute truth

Often, almost- certain

Likely, probably- uncertain (see section 4.6.3)

For Absolute falsehood, I set different criteria. Sentences against the international organisations' rules, against the scientist agreement, against UN climate change protocol and the Paris climate change agreement along with weak modal verbs, uncertain adverbs and ambiguous nouns (see section 4.6.4)

Thought Determines our Language

In a book *An Introduction to Psycholinguistics*, Steinberg, and Sciarini (2006) proposed four theories about the dependence of thought and culture on language;

Theory 1: Thought is impossible without speech. We must learn to speak openly in order to strengthen our cognitive skills.

Theory 2: Language is necessary for thinking. We cannot develop thinking unless we learn the language and how to generate and understand speech.

Theory 3: Our language determines or shapes our experience of nature. How we experience the physical environment, visually, auditorily, and otherwise, will be determined or influenced by language development.

Theory 4: Language shapes or determines our worldview. How we understand our culture and the world will be determined or influenced by our language learning.

All four theories about language do not apply to my research; consequently, a new theory that can be dug out to encompass the research is required. There must, in my opinion, be a fifth theory, such as;

Theory 5: Thought determines language to rule the world

Humans possess a unique ability to use language that no other species can, making them a superior species with a competitive edge over others on the planet. This distinctive trait grants them unrestricted control over other animals. In their seminal work *The Social Construction of Reality*, Berger and Luckmann (1966) proposed that society is built and sustained by three primary processes: externalisation, objectivation, and internalisation. Externalisation is the process that is closest to the focus of my research. People externalise their perceptions of reality through social practices such as talking to others or writing a book, for instance. These ideas are subsequently transmitted to others and become social "objects," gaining a reality or existence that makes them appear to be a "natural" aspect of the world rather than the result of someone's social interaction. Future generations internalise these objectified ideas, and they become a part of their consciousness through socialisation. The scholars agreed that humans first conceive an idea, then develop it in their minds, and then express it through language to pass it on to the next generation. The scholars subtly disclosed that not all humans develop ideas; only a select few do. All four theories above apply to the rest of humanity.

Chomsky (1975) and Islamic Quranic scriptures support my position on the development of the fifth theory. The innate theory stated universal grammar to be inherently present. He says that language is genetically determined. It is already present in human minds; all that is required is a trigger to bring it to life. I go even further and claim that the human mind is aware of everything in the cosmos. Allah, the Al-Mighty, disclosed in Quran, "Then Allah gave Adam knowledge of the nature and reality of all things and everything, and set them before the angels and said: "Inform Me of the name of these if you are truthful" (Surah Al-Baqarah 2:31). These two examples demonstrate that the human mind already contains knowledge of everything; it is only a matter of time, trigger, and location that causes that knowledge to be revealed.

3.2.2 Rationale of the Analytical Theory

Stibbe (2015), an ecological linguist, presents a model of facticity in his book, *Ecolinguistics language, ecology, and the stories we live by*. This model is best for analysing the linguistics features used in the articles extending from absolute truth to absolute falsehood, with certainty and uncertainty between the scales. Grace (2017) also discussed the linguistic construction of reality, but he used metaphor, beliefs, and other factors responsible for the construction of reality (see section 4.2).

3.3 Research Design of the Present Study

First, I used a purposive or judgement sampling tool to collect data from articles in newspapers and news websites. Specifically, I selected articles published between 2017 and 2021. Second, the reason for limiting the data to these five years is that they are a critical period regarding climate change, as these years witnessed significant climate-related events, such as the wildfires in Australia and Turkey, the flood destruction in Germany, and droughts in Pakistan and India. The selection of media discourse was vital since it has a tremendous impact on its followers. Moreover, media language covers every aspect of climate change, significantly influencing the climate change and global warming domain.

I gathered a total of 205,264 words from newspapers and news websites and divided the data into the Eastern (92,067 words) and Western (113,197 words) worlds. I then converted the data into plain text. Specifically, I selected seven countries from each world (Pakistan, China, Russia, India, Japan, Turkey, and Saudi Arabia from the Eastern world, and the US, UK, France, Italy, Australia, Germany, and Canada from the Western world) and collected data from three newspapers in each country. From each newspaper, I selected five articles published between 2017 and 2021, resulting in a total of 210 articles (see Table 1.1 and 1.2). Next, I used the TagAnt software, Product version 3.5.9, to extract all the nouns, verbs, and adverbs from the corpora. The concordance model identified the linguistic features present in the corpus, allowing me to extract nouns, verbs, and adverbs from the text. Finally, I used Stibbe's (2015) modified facticity model to analyse the facticity of the media discourse in the two worlds regarding climate change, classifying the data as absolute truth, certain, uncertain, or absolute falsehood.

3.3.1 Qualitative/Quantitative Mixed Method Research Design

The combination of qualitative and quantitative research methods is highly beneficial for studying social and cultural topics since it allows for a comprehensive analysis of all aspects in greater depth. This research strategy supports and assists in generating ideas for realistic study analysis and enables the evaluation of larger scale discoveries. For this study, the researcher employed qualitative/quantitative mixed research design that incorporates both qualitative and quantitative methods, as defined by Creswell (2003). The study focuses on media discourse and ecolinguistics and examines how Eastern and Western media construct facticity in their stories about climate change. The quantitative methodology involves using the AntConc software to extract lexical categories, while the qualitative research design technique, Baker's (2006) model of concordance, is used to extract lexical categories from the media discourse and covers the qualitative aspect of the study. Concordance makes all occurrences of words in the corpus clear, in the context provided by other words either to the left or right. It is a corpus linguistics tool used to identify words in their contextual environment, making corpus linguistics a qualitative research methodology. Additionally, Stibbe's (2015) facticity model provides a comprehensive framework that helps achieve the study goals and establishes a procedure to respond to research questions in the most precise manner.

3.3.2 Research Sampling

The judgement sampling technique, also known as authoritative or purposive sampling, is a non-probability method that relies on the researcher's expertise and judgement to select participants for a sample. Using this technique, the researcher constructs the sample based on their experience, which can result in highly accurate outcomes with a small margin of error (Kumar, 2018; Suri, 2011).

To collect data from 2017 to 2021, a non-probability sampling technique called judgement sampling was utilized. The target population was articles published in newspapers and news websites. The sample was selected using specific keywords such as climate change, ecosystem, ecology, global warming, green gas emissions, GHG, carbon emissions, deforestation, and species extinction to gather relevant data from the newspapers and news websites.

3.3.3 Data Collection Methods

Several data collection techniques are used in qualitative research, such as interviews, observations, content analysis, textual or visual analysis (from books or movies), and so forth (individual or group). However, the methods that are most frequently used, particularly in social science research, are internet databases, digital libraries, online newspaper websites, interviews, and focus groups.

This study begins by gathering articles as a sample of the media's response to climate change that is purposeful/judgmental. I check numerous databases and focus my search terms before using the Google search engine to retrieve information about climate change from the newspapers using the official websites. I limit my search to three newspapers from seven eastern and seven western countries. I take 210 articles regarding climate change from the period of 2017 to 2021 using free trial subscription facility. Names and countries are mentioned; for details, see Table 1.1 and 1.2. It is good to note that most eastern world newspapers provide free access to their readers without any subscription except for Japanese newspapers. Almost all western newspapers are paid publications, and one cannot obtain articles or news without a subscription.

3.3.4 Data Collection Procedure

To begin, a purposive or judgmental data collection technique was used by entering specific keywords (such as "ecosystem," "deforestation," "global warming," "carbon emission," "greenhouse gases (GHG)," "species extinction," and "ecology") in the Google search box along with the name of the newspaper. A database was compiled in a folder for all three newspapers in seven countries, resulting in a total of 210 articles about climate change from 2017 to 2021, with a massive corpus of 205,264 words. The corpus was divided into two worlds: the Eastern and Western worlds, and each was made into a plain text file. This study is a mixed-methods qualitative and quantitative study that follows three steps. First, the data was extracted using the Baker model of concordance in corpora for nouns, verbs, and adverbs through AntConc 3.5.9 software. Second, Stibbe's (2015) facticity model was used as a standard to analyze the lexical categories in the media discourse about climate change in the two worlds.

Stibbe's (2015) facticity model focuses on linguistic features that the speaker or writer uses to construct facts. These linguistic features include nouns, verbs, and adverbs used to create absolute truth, certainty, uncertainty, or absolute falsehood.

3.3.5 Data Analysis

The facticity model proposed by Stibbe (2015) is considered the most appropriate for analysing the collected data from newspapers on climate change. This model is used as the research approach for the investigation. The facticity model is particularly relevant as it involves evaluating texts based on their alignment with reality regarding climate change. As previously mentioned, I have adapted the model to suit the needs of this study. Stibbe (2015) identifies five linguistic devices for constructing reality, but for this study, only modal verbs are relevant. Therefore, I have added nouns and adverbs to the model, and have specifically assigned the four principles of facticity. The 210 articles from the two worlds are analysed and classified into four categories: absolute truth, certain, uncertain, or absolute falsehood.

CHAPTER 4

DATA ANALYSIS

In this chapter, the first section (4.1) compared the lexical categories of the Western and Eastern worlds. The data was retrieved from articles on Western and Eastern news sources about climate change. The facticity model was examined in section 4.2, which described its relevance in the study, explained the measurement index, and provided a modified framework for the analysis of media discourse data. Facticity construction was discussed in section 4.3, which provided detailed information about nouns, modal verbs, and adverbs. The mean comparison of the three lexical categories was discussed in section 4.4, while section 4.5 explained the mean comparison between the two worlds. Finally, the results, interpretation, and discussion were presented in section 4.6.

Note: In this study, reality, fact, and truth are considered to be synonymous and are used interchangeably, as Stibbe (2015) used these terms in the same way.

4.1 Comparison of Lexical Categories

The lexical categories of the two worlds corpora's frequencies were compared. The facticity of the media discourse was analysed through lexical categories, which are the significant elements of linguistics.

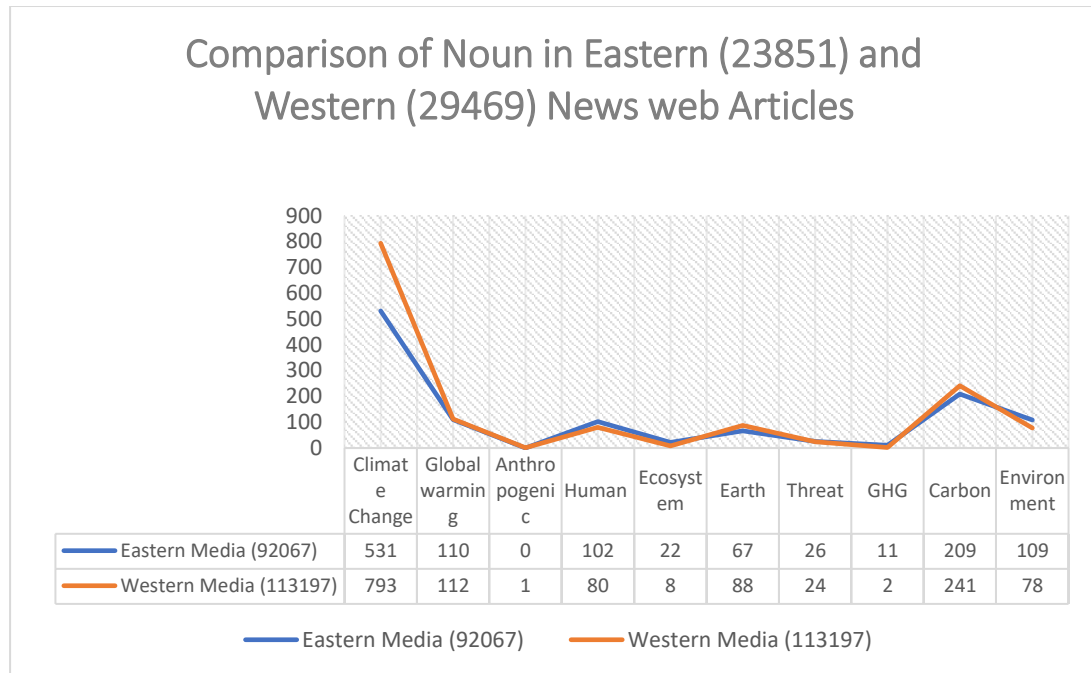
4.1.1 Comparison of Nouns in Eastern and Western Data

The nouns in the Western corpus have a higher frequency than in the Eastern corpus. The frequency of Eastern media nouns is 23851, while Western media has used 29469 nouns. The difference between the two worlds is 5618 nouns. The difference in frequency between the two worlds is depicted in Figure 4.1, which is based on keywords used to select articles. The words "Climate Change," "Environment," and "carbon" show significant differences. The line graph represents the data from the two worlds, with the orange line representing Western media and the blue line representing Eastern media. The data is revealed more clearly in the line graph, with the orange line starting at roughly 800 points and being the highest, while the blue line crosses the 500-point mark in the second position. GHG is at the lowest position on the line graph, practically at the 0 position.

The data between the two worlds, namely the Eastern and Western worlds, is shown in Figure 4.1. "Climate change" has the highest frequency among the nouns and is given ample space in both worlds. It is mentioned 793 times in Western media but only 531 times in Eastern media.

Figure: 4.1

Comparison of Noun in Eastern and Western Data



According to Figure 4.1, the primary differences among nouns are *humans, the ecosystem, carbon, and the environment*. The differences in noun frequencies are 102-80, 22-8, 209-241, and 109-78, respectively. However, the Western media has a larger corpus than the Eastern media. The overall corpus of Eastern media is 92067 words, and the Western media has a 113197-word corpus. The difference is nearly 21130 words, which is significant. Nevertheless, when we look at the frequency of important words, most of them are higher in Eastern media, such as human, ecosystem, greenhouse gas (GHG), and environment. This indicates that the Eastern media is more careful about using climate-related nouns than the Western media.

4.1.2 Comparison of Verbs in Eastern and Western Data

Compared to the Western world, about half of the primary verbs are used less in Eastern world corpus. Table 4.1 shows that Western media employed 9544 primary verbs compared to 5587 in the Eastern world. The verb is split into two parts: the main verb and the auxiliary verb. The helping verb and modal verb are two types of auxiliary verbs.

Table: 4.1

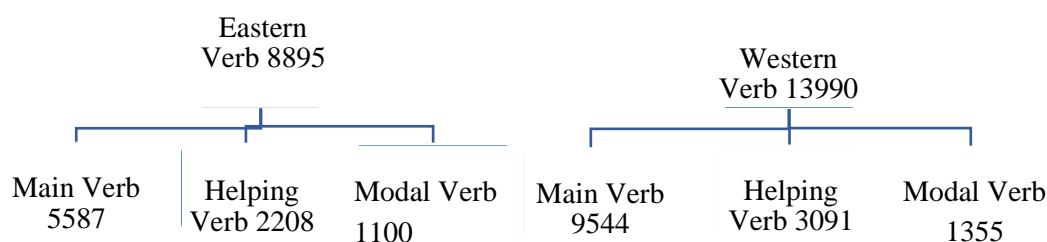
Frequency of Verbs between Eastern and Western world

Verb	Eastern Articles Freq 8895	Western Articles Freq 13990
Main Verb	5587 N= 62.81 %	9544 N= 68.22%
Helping Verb	2208 N=24.82	3091 N=22.09
Modal Verb	1100 N= 12.36	1355 N= 9.68

The Eastern corpus has a smaller main verb than the Western data. There are about 4000 words difference between them. The frequency of Western data is 68.22%, compared to 62.81% for Eastern data. The gap between helping and modal verbs is astounding. Compared to western media data, the frequencies of helping and modal verbs are high, at 24.82 percent and 22.09 percent, and 12.36 percent and 9.68 percent, respectively.

Figure: 4.2

Verbs Frequency in Eastern and Western World



The verb is the essential part of a sentence; without it, there is no sentence. The figure 4.2 reveals the tale about the verbs utilised in the corpus of Eastern and Western media discourse. The Figure 4.2 illustrates the verb split more straightforwardly. The eastern data is 8895 words large, while the western data is 13990 words large. Compared to the western media corpus, the use of helping and modal verbs are vital in the Eastern media corpus.

4.1.3 Comparison of Adverbs in Eastern and Western Data

Table 4.2 depicts the significant impact of adverbs as a substantial lexical category on fact construction. Adverbs such as "still, likely, and about" have the most significant frequency difference, with 46-93, 46-78, and 113-283 occurrences, respectively. In a total corpus of 92,067 words, Eastern media uses 3,280 adverbs, while Western media uses 4,632 adverbs in a corpus of 113,197 words. The net percentage of Western media data is higher than that of Eastern media, i.e., Eastern N = 3.56%, and Western N = 4.09%. Eastern media has certain adverbs with many occurrences, but it has fewer frequencies than Western media. However, the words 'especially,' 'perhaps,' and 'mostly' are used more frequently in Eastern media than in Western media. These adverbs with 64-63, 27-26, 7-3, and 14-10 frequencies note the difference.

Table 4.2

Frequency of Adverbs between Eastern and western Worlds

Total No	Total Adverb	Eastern Data adverbs (3280) Freq	N= 3.56%	Western Data Adverbs (4632) Freq	N= 4.09%
1	Still	46 1.40%	N=	93 2.00%	N=

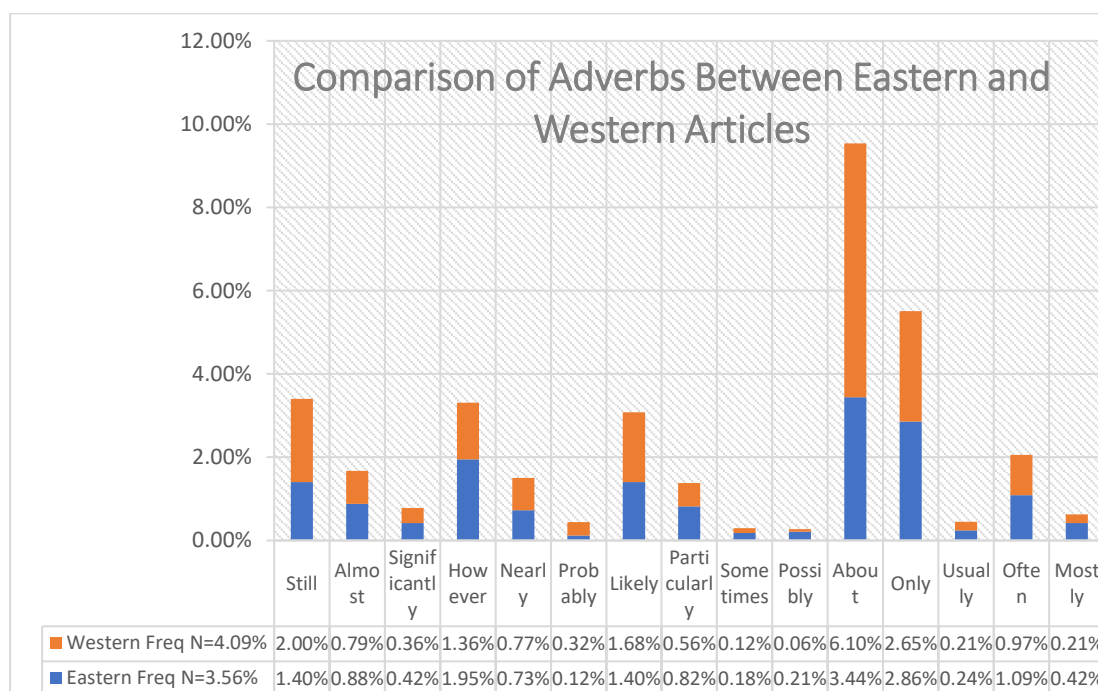
2	Almost	29 0.88%	N=	37 0.79%	N=
3	Significantly	14 0.42%	N=	17 0.36%	N=
4	However,	64 1.95%	N=	63 1.36%	N=
5	Nearly	24 0.73%	N=	36 0.77%	N=
6	Probably	04 0.12%	N=	15 0.32%	N=
7	Likely	46 1.40%	N=	78 1.68%	N=
8	Particularly	27 0.82%	N=	26 0.56%	N=
9	Sometimes	06 0.18%	N=	06 0.12%	N=
10	Possibly	07 0.21%	N=	03 0.06%	N=
11	About	113 3.44%	N=	283 6.10%	N=
12	Only	94 2.86%	N=	123 2.65%	N=
13	Usually	08 0.24%	N=	10 0.21%	N=
14	Often	36 1.09%	N=	45 0.97%	N=

15	Mostly	14 0.42%	N=	10 0.21%	N=
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The frequencies are further elaborated in figure 4.3. The total number of adverbs in the two worlds' media corpora is shown in this bar chart. The orange bar represents Western data, whereas the blue bar represents Eastern data. "about" is the tallest bar in figure 4.3. This adverb appears in both corpora in considerable amounts. The adverb "only" comes in second. According to the figure under discussion, the adverbs "occasionally" and "maybe" have the lowest frequency in the collected data. "Occasionally" and "maybe" are used 6-6 and 7-3 times, respectively.

Figure: 4.3

Comparison of Adverbs Between Eastern and Western Articles



The net percentage of the 'about' adverb is the highest for both worlds' data, e.g., 6.10% and 3.44%. The lowest percentage of 'possibly,' in eastern corpus is 0.21 and for western is 0.06.

4.2 Facticity Model

Stibbe (2015) was the first linguist to apply the facticity model in his work. In his book, he identified five linguistic features that contribute to facticity: 1. Modality, 2. Expert Authority Request, 3. Quantities, 4. Hedges, and 5. Presumptions. However, for my study, I am only interested in modality; the other features are not relevant. Stibbe (2015) extended the boundaries of linguistic facticity to include lexical categories such as modality and quantifiers like "some" and "many." However, he did not explain how these could be indexed, and he did not consider lexical categories when evaluating the facticity of language. While various authors have explored different ways to describe the facticity of language, none have focused specifically on linguistic aspects, which could lead to further exploration of facticity in language.

Fake experts, logical fallacies, impossible expectations, cherry picking, and conspiracy theories are among the five approaches highlighted by Hoofnagle (2007) and Diethelm and McKee (2009) as contributing to linguistic facticity. These factors contribute to facticity in various ways, but they do not fully capture the linguistic features that determine facticity. Therefore, this study examines data based solely on linguistic features to determine the facticity of media language. By analyzing lexical categories like nouns, verbs, and adverbs, we can better understand the language's facticity from bottom to top.

4.2.1 Facticity Measurement Index

Stibbe (2015), an ecological linguist, presents a model of facticity in his book, *Ecolinguistics language, ecology, and the stories we live by*. This model is best for analysing the linguistics features used in the articles extending from absolute truth to absolute falsehood, with certainty and uncertainty between the scales.

Figure 4.4

Measurement Index for Facticity Model

Absolute truth Certain Uncertain Absolute Falsehood



The facticity model measurement index has four principles to mark the statements absolute truth, certain, uncertain, and absolute falsehood.

4.2.2 Framework for the Facticity Model and its Explanation

The following ideas provide the basis for the facticity model data analysis. The data was classified as absolute truth, certain, uncertain, or absolute falsehood based on these criteria. "Absolute truth" and "certain" statements must align with the findings, surveys, and research of international organizations, as well as the consensus of scientists on global issues. Proper nouns, strong verbs, and adverbs should be used in media discourse statements to reflect these criteria. On the other hand, "absolute falsehood" and "uncertainty" statements should be used in contrast to international organizations' decisions, surveys, conclusions, and research, and should go against the consensus of scientists on global issues. These statements should include common nouns, weak verbs, and weak adverbs.

The following Principles further clarify my narrative:

Nouns: Proper Noun (Truth), Common Noun (Uncertain)

Nouns formed from adjectives (words that characterise nouns) or verbs are known as nominalization (action words). "Interference," "choice," and "argument" are nominalizations of "argue," respectively (Purdue University). Furthermore, Nominalizations (Biber and Gray 2010; Halliday 1979) and passive constructions (Halliday and Martin 1993) are linguistic strategies that diminish explicitness and contribute to the facticity of language.

For instance

The committee observed temperature change.

The temperature change was observed. (can turn into the passive form)

The agent (the committee who observed temperature change) has been omitted. Similarly, the nominalized construction,

Temperature change observation

The verb 'observes' transformed into the noun 'observation' omits the agent.

Passivation (Uncertain)

Furthermore, eco-naming demonstrates an intimate relationship with nature by providing natural names to humans, such as Gulab sher (rose and lion). As a result,

nouns are critical in climate change discourse to establish the text's facticity, particularly in media discourse.

Verbs: Auxiliary verb and Main Verb

Stibbe (2015) does not mention the facticity degree of primary and helping verbs. Only modal verbs are addressed in his work, which might raise or diminish the text's facticity. As a result of this flaw, I removed the main verb and helping verb from the category of measuring the verb's facticity in the text in this study. Modality, defined by Richardson (2007) as the "degree to which a speaker or writer is committed to the assertion he or she is making," is a valuable concept. Modality ranges from low commitment (e.g., the use of the models 'might' or 'probably') to high commitment (e.g., the use of the models

'might' or 'probably' (e.g., shall, must, or have to).

Modal Verb: shall, must, have to, ought to (absolute truth)

Will, can, could, would, should, (certain)

May, might (Uncertain)

Adverb: The following table of adverbs is selected for data analysis through facticity. The following adverbs are used in the data of the climate change article. The facticity measurement has been given to all these adverbs used in the media discourse, which may depict the climate change narrative.

Table 4.3

Adverbs Facticity Level

No	Adverbs	Facticity level
1	Still	Certain
2	Almost	Certain
3	Significantly	Certain
4	However,	Uncertain
5	Nearly	Uncertain

6	Likely	Uncertain
7	Particularly	Certain
8	Sometimes	Uncertain
9	Possibly	Certain
10	About	Certain
11	Only	Certain
12	Usually	Certain
13	Often	Certain
14	Mostly	Certain
15	Probably	Uncertain

Absolute Falsehood

For Absolute falsehood, I set different criteria. Sentences against the international organisations set rules, against the scientist agreement, against UN climate change protocol, with weak verbs, helping verbs, pronouns, common nouns, uncertain modal verbs, or uncertain adverbs are considered absolute falsehood. It is a very tiresome job to find out the absolute falsehood sentence because there have been many factors to see and then place the sentence in the category of absolute falsehood.

4.3 Facticity Construction in Media Discourse

The data was analysed using the facticity model. The tables and figures that followed tell an amazing story about how climate change is portrayed in the media discourse.

4.3.1 Nouns Facticity Construction in both Corpora

Table 4.4 presents an analysis of the facticity of the nouns included in the data. The value "N" represents the net proportion of the observed data. The term "climate change" was analyzed for facticity, and the data showed that it appears 531 times in eastern media and 793 times in western media. In terms of facticity, this term is used as an absolute truth 52.7% of the time in the East, compared to 45.9% in the West.

Regarding the "certain" principle, eastern data used 35.9% compared to 43.8% in western data. Interestingly, western media writers used absolute falsehood more than eastern media writers for this term. The data for the "uncertain" principle was similar for both media. The word "global warming" appeared 110-112 times in the data, and the net percentage of absolute truth was higher in eastern media than in western media, at 57.2% and 44.4%, respectively. Absolute falsehood was not used in either media, but western media had a higher percentage of ambiguous statements (35.0%) than eastern media.

Table: 4.4

Nouns Facticity Net comparison between Eastern and western worlds

No	Nouns E/W Mean	Absolute Truth N= E/W % M= 56.4/60.9	Certain N= E/W % M= 39.3/35.0	Uncertain N= E/W % M=1.8/2.4	Absolute Falsehood N= E/W % M=2.9/0.13
1	Climate Change 531/793	N= 52.7/45.9	N= 35.9/43.8	N= 1.8/1.0	N=0.94/1.38
2	Global warming 110/112	N=57.2/44.4	N=42.7/50.8	N=0.0/4.4	N=0.0/0.0
3	Anthropogenic 4/ 1	N=50.0/100	N=25.0/0.0	N=0.0/0.0	N=2.5/0.0
4	Human 102/80	N=50.9/38.7	N=40.1/57.5	N=6.8/3.7	N=1.9/0.0
5	Ecosystem 22/08	N=59.0/62.5	N=40.9/37.5	N=0.0/0.0	N=0.0/0.0
6	Earth 67/88	N=62.6/64.7	N=34.3/36.3	N=1.4/5.6	N=1.4/0.0
7	Threat 26/24	N=65.3/83.3	N=30.7/12.5	N=3.8/4.1	N=0.0/0.0
8	GHG 66/76	N=57.5/53.9	N=57.5/40.7	N=0.0/3.9	N=0.0/0.0
9	Carbon 209/241	N=50.2/58.5	N=47.4/39.0	N=1.9/2.0	N=0.0/0.0

10	Environment 109/78	N=58.7/57.6	N=38.5/42.3	N=2.7/0.0	N=0.0/0.0
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Note. E means Eastern, W means Western, and N means Net percentage

The Eastern media data for the term 'human' is more reliable than Western media data, with a difference of 50.9% - 38.7%. In terms of facticity, the terms 'carbon' and 'environment' show a clear distinction. The Eastern media has a net 'carbon' percentage of 50.2, while the Western media has a net carbon proportion of 58.5 percent. Both media data show nearly the same absolute truth for the word 'environment,' with 58.7% and 57.7%, respectively. The impact of the remaining nouns in the data on the facticity of the two worlds' media discourse was minimal due to their lower frequency.

The mean for 'noun' for all 10 nouns in the data is 56.4-60.9 percent. According to the mean, western data has a higher percentage of absolute truth than eastern data. Eastern media have a higher percentage of 'certain' facticity principles than western media, i.e., 39.3-35.0%. The western media has more ambiguous sentences than the eastern media, but when it comes to pure falsity, the eastern media is on top. The mean of uncertain was 1.8-2.4 percent, and the mean of absolute falsehood was 2.9-0.13 percent. In terms of word usage in the corpus, the data demonstrates that western media has a higher scale of facticity than eastern media.

The disparity in frequency demonstrates how climate change has been portrayed in the media. In comparison to eastern media, the West portrays climate change with the highest frequency and most realism. Furthermore, readers' perceptions of climate change have been clouded by the eastern media's increased use of falsehood words. The use of weaker nouns results in lower acceptance of the phenomenon of climate change and, eventually, a lower motivation to mitigate its effects.

4.3.1.1 Examples of Nouns from the Eastern Media

Here are some noun instances with detailed explanations of how they fit into the measuring index I created. Only one example has been picked from the word, namely climate change, which has a higher frequency and possesses all four index principles for facticity measurement.

“Guterres told a U.N. Security Council meeting on the link between **climate change**, conflict, and terrorism that when climate disruptions hinder the ability of government institutions to provide public services, "it fuels grievances and mistrust towards authorities.” (Absolute Truth)

The speaker mentioned the prestigious international body, and the base verbs in three places, e.g., hinder, provide, and fuels, increased the facticity to the level of absolute truth.

“Every time there is a so-called weather event, we hear from politicians and scientists about how it is down to **climate change**.” (Certain)

Here the writer uses "so-called, event, about and how," which lowers the facticity. These words rank/index this sentence a certain. If we try to make this sentence absolute truth, we must remove the so-called event from the conference. The sentence is like being; “every time there is a weather conference, we hear from politicians and scientists about how it is down to climate change”.

“Viewing **climate change** as a highly complex process, the scholar said human activities are not the only factor to blame for global warming, noting, "Most of the so-called greenhouse gases, such as methane, are released into the atmosphere not because of human activities, but from the marshes -- a natural process of organic decay.” (Uncertain)

In this example of media, the writer uses many unnecessary words, lowering the sentence's facticity. These words make this sentence indexed as "uncertain" in the model of Stibbe facticity. The words; complex process, the only, nothing, so-called, not because of, decrease the facticity level of the sentence. If we remove these words, there are great chances that this sentence shall become certain or absolute truth. Let us try;

Viewing climate change as a difficult phenomenon, the scholar said human activities are the main factor to blame for global warming, "Most of the greenhouse gases, such as methane, are released into the atmosphere because of both human activities and marshes—a natural process of organic decay."

“President Donald Trump's recent denial of **climate change**, referring to it as a hoax, makes it difficult to imagine a world that is willing to move away from its reliance on fossil fuels.” (Absolute Falsehood)

This quoted statement of President Trump is an absolute denial of the facts given by international organisations, scientists, activists, earth protectors, and many more. There is almost 100% agreement among scientists that climate change is real and human activities are the leading cause (Powell, 2017, Cook et al., 2016). However, multiple studies suggest that between 20%-40% of the U.S. public believes that climate change is a hoax, and Ex-President Trump was one of them (Uscinski et al., 2017).

4.3.1.2 Examples of Nouns from the Western Media

The western media discourse data is lengthy and has more nouns than the eastern media data. The following examples regarding the noun 'climate change' elaborate the facticity of the text more in a simple way.

“The public has increasingly demanded that the Government do more to tackle **climate change**.” (Absolute Truth)

The writer uses "has, increasingly, do more, and to tackle" to enhance the facticity index in this example. The writer employs the word increasingly, the third form of the verb 'demanded,' with care to raise the sentence's facticity index.

“But aside from Southeast Florida, which has put so much effort into making discussion of **climate change** a priority, much of the rest of the Atlantic Coast is less likely to engage in climate discussions, despite recent increases in tidal flooding.” (Certain)

The use of 'but aside and likely' indexes this sentence to the level of certain. If these two words are removed, the sentence has become absolute truth.

“Net zero is "the" term of COP 26 and many **climate change** initiatives around the world. But what is it exactly, and what does it mean for countries, companies, and everyday people in the context of climate change?” (Uncertain)

The questions asked by the writer about net-zero and climate change, e.g., 'what is it, what does it mean,' make weak the facticity of the sentence. These questions create doubts and uncertainty in the minds of the public about climate change.

“Minister for Drought and Natural Disasters David Littleproud, who has said he "[doesn't] know if **climate change** is manmade," was also asked to comment.” (Absolute falsehood)

Mr. David Littleproud is totally against the anthropogenic phenomenon of climate change in this instance from western media data. He used 'does not', which are strong words of denial and 'if' creates doubts in the statement, which shows a severe attack on this climate change problem. Moreover, he has a very high designation in the Government but is still a denier of climate change, which is very pathetic.

4.3.1.3 Readability Statistics of the Facticity Model

The readability table presents two important aspects of reading: 1. Flesch Reading Ease and 2. Percentage of Passive Sentences. Table 4.5 shows that compared to the Eastern data, the Flesch Reading Ease scale is higher in the Western data. Reading Western data is more straightforward than reading Eastern data. The Flesch Reading Ease Scale for Western data is 41.1, while for Eastern data, it is 35.3. Additionally, the percentage of passive sentences is significantly higher in Eastern data than Western data. The Eastern corpus has 16.3% passive sentences, while the Western media corpus contains only 10.0%.

Table 4.5

Readability Statistics

Two World	Flesch Reading Ease	Passive Sentences
Eastern	35.3	16.3%
Western	41.1	10.0%

Readability and passivation scale of statistics are a unique property of Microsoft word. This feature is inbuilt in the software, and can give statistics accordingly.

Figure 4.5

Readability Statistics of Eastern and Western Media Discourse

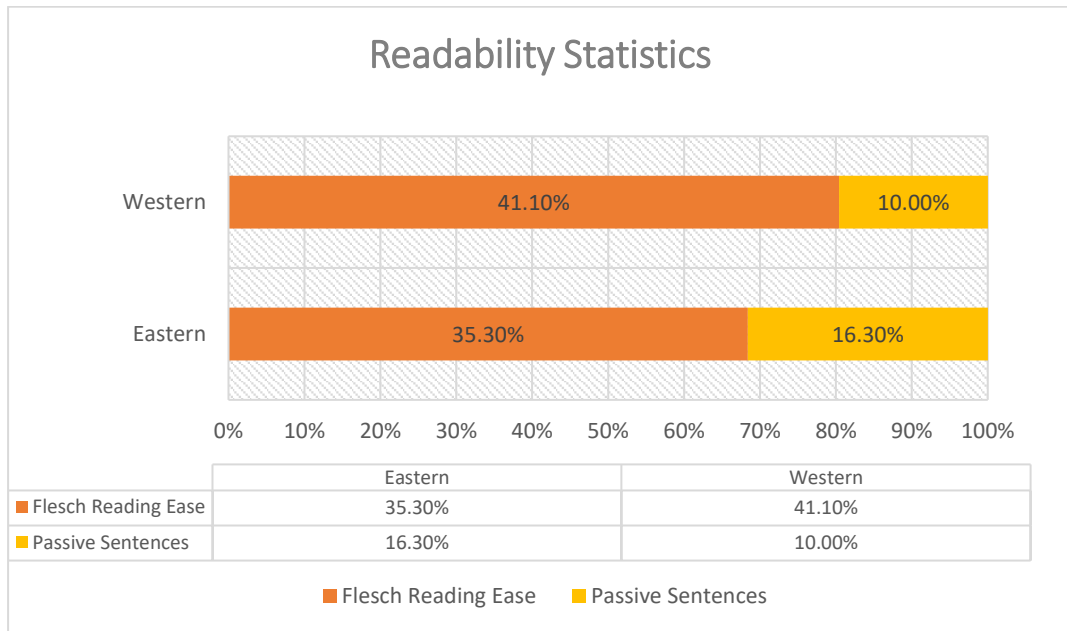


Figure 4.5 summarizes the readability data more succinctly. The Flesch Reading Ease scale is represented by the orange bar in the chart, while the Passive Sentence scale is represented by the yellow bar. The higher the score on the Flesch readability scale, the more difficult the text is to read. Therefore, this graph demonstrates that Western climate change articles are more complex than Eastern climate change articles. The more passive sentences there are in the corpus, the more difficult the text is to comprehend. There are more passive sentences in Eastern data; therefore, its data is more difficult to read compared to Western data.

4.3.2 Verbs Facticity Construction in Both Media Discourse

The facticity measurement scale in media discourse demonstrates that verbs are the most critical component in linguistic categories. Stibbe (2016) employed five linguistic devices to determine facticity. I used one linguistic device, lexical categories, to analyse data and determine the facticity index. The following table demonstrates the truth of the text used by media writers regarding climate change, mainly modal verbs. The highest frequency modal verbs are "will, can, would, and could." 'Will' appears 412 times in Eastern data compared to 453 times in Western data. The tremendous variation in frequency is in "can," which is used just 187 times in Eastern media compared to 307 times in Western media.

Table: 4.6

Comparison of modal verb between Eastern and western Data

No	Modal Verb	Frequency E/W	No	Modal Verb	Frequency E/W
1	Will	412/453	6	Would	157/198
2	Must	60/39	7	Should	99/73
3	Can	187/307	8	Could	111/191
4	May	62/97	9	Might	25/30
5	Shall	00/01	10	Ought to	01/00

Figure 4.6 reveals the comparison of modal verbs between eastern and western worlds. Net frequency is being given in the figure to illustrate the data more in an easy way.

Figure: 4.6

Comparison of Modal Verb between Eastern and Western Data

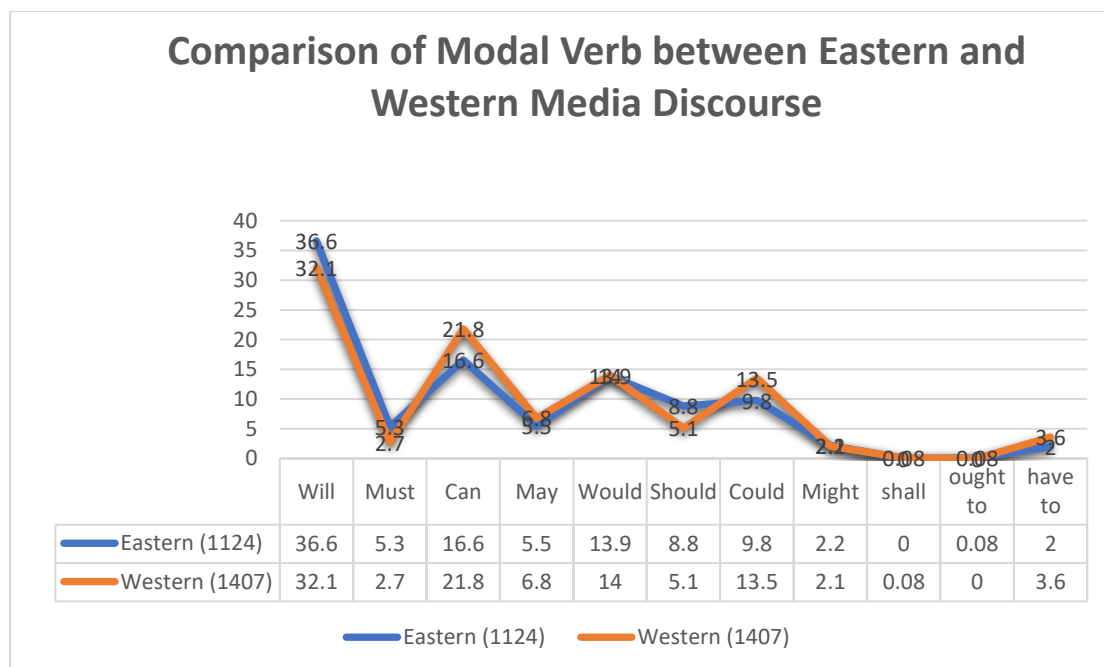


Figure 4.6 gives percentage data of the modal verbs. Modal verb 'will' has 36.6 % highest in all. The lowest percentage possessed 'shall and ought to,' which touches

zero digits. 'can' modal verb be second-most used in both media data. The percentage is 16.6 and 21.8, respectively.

4.3.2.1 Comparison of Mean Facticity Scale

Table 4.7 reveals astonishing data regarding the facticity of the data of the two worlds. Eastern data has a substantial facticity scale against the western data. The mean of eastern data in absolute truth is 1.84% compared to western data, i.e., 1.59%. The same is the case in the uncertain scale; eastern media outclassed the western media because uncertainty in western media is high against the eastern media. There is a significant difference in the scale uncertain, e.g., western media has 4.45% mean facticity while eastern media has 3.85% mean facticity.

Table: 4.7

Mean Comparison of Modal Verbs Between Eastern and western worlds

Facticity scale	Absolute Truth	Certain	Uncertain
Modal verb	shall, must, have to, ought to	Will, can, could, would, should	May, might
Eastern Data	M= 1.84%	M= 17.14%	M= 3.85%
Western Data	M= 1.59%	M= 17.3 %	M= 4.45%

As the certainty of the media discourse is a concern, both worlds have no significant difference. Mutually, they share the same mean frequency; the facticity scale is 17.14 and 17.3 %, respectively.

As we know, western data is significant; the difference is nearly 21000 words. However, the facticity level is still high in eastern media data against the western media data in modal verbs. It shows that the western world still doubts climate change, although their publications and scientific researches are significant in numbers. The global corporate worlds spread fake news about climate change, creating reservations in western peoples' minds.

4.3.2.2 Examples of Modal Verb from the Eastern Media

I have mentioned some instances from the eastern media regarding the modal verbs used in the corpus. These examples have been taken from the data possessing the modal verbs. I take only one example from each facticity scale.

“We have already changed our planet, and some of those changes we will **have to** live with for centuries and millennia to come, said IPCC co-author Joeri Rogelj, a climate scientist at Imperial College London.” (Absolute Truth)

The writer uses strong helping verbs and ed-verbs with a strong modal verb. All these make this sentence absolutely true. We have found so many strong modal verbs in eastern media, and that is the point that stands it out high on the scale of facticity.

“...he expects China **will** achieve the goal even ahead of the date.” (Certain)

This instance from the eastern media is indexed certain on the scale of facticity because here, the writer uses the weak modal verb ‘will,’ which means less truth. Therefore, this sentence is certain in the facticity scale.

“But the motives **may** be less important than the implications.” (Uncertain)

This sentence uses the modal verb ‘may,’ which is weak in facticity. May modal uses in the meaning of uncertainty; when the speaker or writer does not make sure about the fact, he/she uses the ‘may’ modal verb. In eastern media data, writers use a less weak modal verb, therefore, have high facticity in text.

“This **might** appear to be a minor quibble over semantics, but a large amount of evidence is required to force such a shift.” (Uncertain)

In the same case with the ‘might’ usage, this modal verb also shows less facticity in the media text. Here the writer uses ‘might’ in the first part of the sentence, then uses the passive voice in the second part, creating more uncertainty. These examples show that the writer has well and resilience to use any word to make the text less factual or high factual. It is up to the writer, who has full capacity and knowledge to create what type of masterpiece, i.e., absolute truth or absolute falsehood.

4.3.2.3 Examples of Modal Verb from the Western Media

“We **have to** bring as many voices as possible to the table to talk about climate change: to practice what we call inclusive multilateralism.” (Absolute Truth)

This strong modal verb makes the absolute sentence true. Moreover, the to-infinitive verb (to practise) and base verb (call) create more strong facticity in the sentence. The analysis finds that eastern media corpora are more fictitious than the western media corpora in terms of the modal verb.

“We **will** not fight climate change with a virus.” (Certain)

This illustration uses 'will' in the sentence. The modal verb 'will' is used for possibility of an act or action, which does place the sentence certain in the scale of facticity. To increase the facticity in this sentence, the writer needs to replace 'will' with the 'have to' or 'must.'

“The study **might** offer incentive for policy makers to pursue reforestation.” (Uncertain)

The usage of 'might' lowers the facticity and creates uncertainty in readers' minds. Though the writer uses 'to pursue,' which is a strong verb, this weak modal verb (might) blurs that verb and decreases the facticity in the sentence.

“...which means the developed world **may** actually meet its original target in three years' time.” (Uncertain)

The use of 'may' in this sentence creates ambiguity in the minds of those who care about the environment, leaving them puzzled about whether the set target will be achieved in three years. Developed countries have set a target to mitigate carbon emissions within three years, but the writer's use of 'may' reduces the facticity of the sentence and thus undermines people's trust.

Modal verbs play a vital role in establishing facticity in texts, and writers use them carefully, particularly in articles related to climate change, especially in the Eastern world. This reflects the greater awareness of climate change in the East, leading to the use of more factual modal verbs than in the West. The West still harbors doubts about climate change and is unsure whether to believe in conspiracy theories or trust scientists and international organizations. This skepticism among writers, politicians, and the elite in society is reflected in their articles on climate change.

4.3.3 Adverb Facticity Construction in Media Discourse

An adverb is another lexical category that can determine the facticity of the text. Writers and speakers often use adverbs to convey their message in a controlled and deliberate manner. Many adverbs can indicate the facticity of a sentence; some are strong, some are weak, and some are very weak, creating uncertainty in people's minds. If we examine the frequency of adverbs in the two media corpora, we can see that

eastern media uses adverbs 3280 times, while western media uses them 4632 times, with a difference of 1352 adverb frequencies.

Table: 4.8

Mean Facticity of Adverbs Between Eastern and Western Worlds

No	Adverb E/W 3280/4632	Freq: E/W	Net Freq. of Adverbs	Facticity level	Mean of Facticity M= E/W %
1	Absolutely	08/04	N= 0.24/0.08	Absolute Truth	M= 0.49/0.53 %
2	Clearly	24/24	N=0.73/0.51	Absolute Truth	
3	Actually	20/56	N=0.60/1.20	Absolute Truth	
4	Significantly	14/17	N=0.42/0.36	Absolute Truth	
5	Only	94/123	N=2.86/2.65	Certain	
6	Often	36/45	N=1.09/0.97	Certain	
7	Mostly	14/10	N=0.42/0.21	Certain	M= 1.24/1.19 %
8	Particularly	27/26	N=0.82/0.56	Certain	
9	Still	46/93	N=1.4/2.0	Certain	
10	Almost	29/37	N=0.88/0.79	Certain	
11	About	113/283	N=3.44/6.10	Uncertain	
12	Probably	04/15	N=0.12/0.32	Uncertain	
13	Likely	46/78	N=1.4/1.68	Uncertain	M= 1.52/2.04 %
14	However,	64/63	N=1.95/1.36	Uncertain	
15	Nearly	24/36	N=0.73/0.77	Uncertain	

Table 4.8 provides insight into the facticity scale of adverbs. Fifteen adverbs have been selected for their significance and high frequency in media discourse, and they are divided into three main principles of the facticity model: absolute truth, certain, and uncertain. There are four absolute truth adverbs, six certain adverbs, and five uncertain adverbs. The two adverbs with the highest frequency are "only" and "about," with a frequency of 94-123 and 113-283, respectively. Western media uses more adverbs than Eastern media. The net percentage of these two adverbs in Eastern and Western media is 2.86-2.65 and 3.44-6.10, respectively. The percentage for "only" shows that Eastern media has used it more frequently than Western media, while the percentage for "about" is reversed and higher in Western media.

Similarly, this pattern is seen in almost all adverbs. Other adverbs, such as "often," "still," "likely," and "however," have the second-highest net percentage. According to the order, these adverbs have net percentages of 1.09-0.97, 1.4-2.0, 1.4-1.68, and 1.95-1.36, respectively. The significant difference is observed in the "still" adverb, where Eastern media writers use it only 1.4%, while Western media writers use it 2.0%. The same is true for other adverbs with low frequency, resulting in no significant difference.

The most significant difference lies in the facticity scale. The scale reveals that western media has won the competition in the facticity scale because it has a higher mean percentage on the scale of absolute truth compared to the eastern media articles. The mean facticity of absolute truth is 0.49-0.53% in both media data, indicating that western media is more factual than eastern media concerning the four mentioned adverbs. Now, regarding the principle of 'certain', this principle has a total of six adverbs in both media data, with a mean of 1.24-1.19%. It clearly shows a significant facticity scale in eastern media against the western media. This scale reveals that eastern media writers are more certain about their writing than western media writers. Lastly, the mean of the facticity scale principle is 'uncertain'. The uncertain scale lowers the facticity of the text, and the mean of 'uncertain' in eastern and western media data is 1.52-2.04%. The numbers clearly show that western media writers are more uncertain in articles about climate change than eastern media writers. The eastern media writers have a clear vision and trust in scientists and international organizations, making them closer to the facticity scale than western media discourse writers.

Figure: 4.7

Comparison of Adverbs between Eastern and Western Data

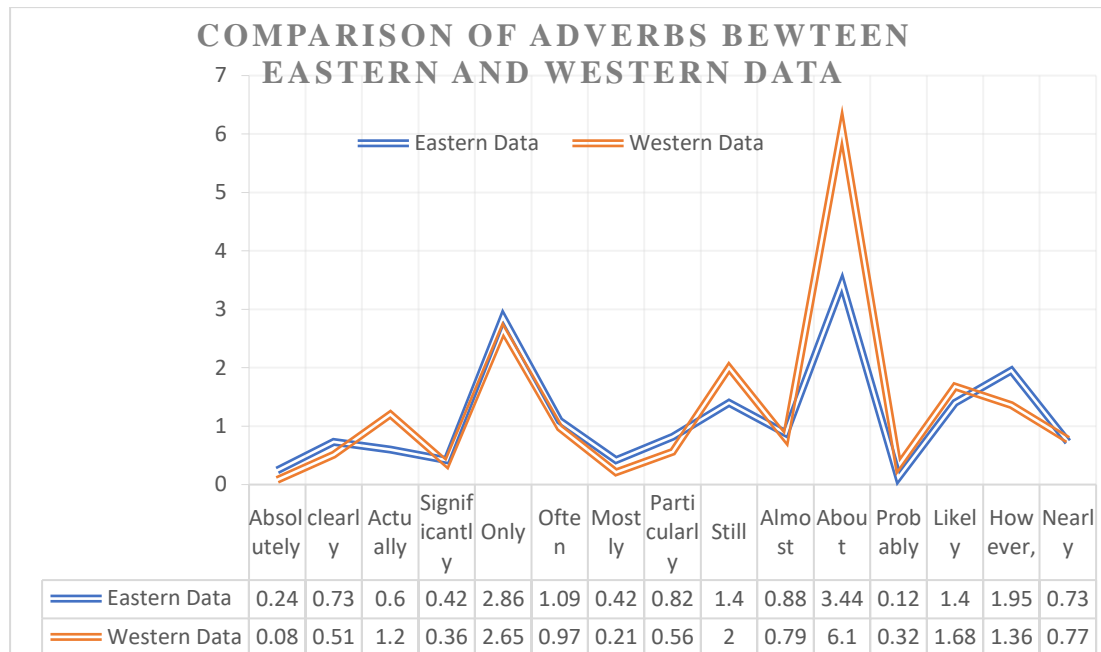


Figure 4.7 reveals various aspects of adverb data in the facticity model. The line graph indicates that the frequency of adverbs is higher in western media compared to eastern media, but certain adverbs appear more frequently in eastern media than in western media. The blue line representing eastern media data appears higher than the orange line in the adverbs 'only, often, absolutely, and however.' Conversely, the western graph line also appears higher in some adverbs. The orange line is clearly above in the adverbs 'actually, still and about.' Overall, the data suggests that both worlds are in competition with each other, with one excelling in one area and the other in another. Western data has higher facticity in the first principle of the facticity model. In the second and third principles, eastern media data is more factual than the western media discourse.

4.3.3.1 Examples of Adverb from the Eastern Media

The following examples elaborate on the stance of facticity in the text of media discourse regarding climate change.

1. "That is **absolutely** true of the United States. It brings up difficult political issues and it brings up difficult questions of science," he said." (Absolute Truth)

This adverb 'absolutely' creates facticity in the sentence and the base verb. Three times a base verb has created the absolute facticity in the sentence.

2. “It is a common misconception that climate is **actually** a different name for weather, but this is far from the truth.” (*Absolute Truth*)

The strong adverb with a strong base verb 'is' marks this sentence highest on the scale of facticity measurement yardstick. One thing to remember is that the use of 'is' here is a base verb, not a helping verb.

1. “While weather is **mostly** measured in a considerably shorter period of time, it is measured from day-to-day or year-to-year.” (Certain)

The ‘mostly’ adverb is strong but not as strong as absolutely or actually. In the above sentence, the adverb 'mostly' places this sentence in the second principle of the facticity model. The use of passive voice in the second part of the sentence further weakens the facticity of the sentence, placing it on the scale of 'certain' of the Stibbe (2015) facticity model.

2. “The climate crisis **only** becomes part of our daily agenda when disasters such as floods and fires hit but the issue is actually much larger.” (Certain)

This instance is fascinating because, in the first part of the sentence, the writer uses 'only' as a weak one, but in the second part, he uses 'actually' as a strong one. The connector 'but' an interjection changes the balance to the scale of 'certain' from 'absolute truth.' If we remove the 'only' adverb, the sentence will become an 'absolute truth.'

1. “There are **likely** to be 90 to 120 days in a year with maximum temperatures above 35.0 C in case of 1.5 to 2.0 C warming and over 180 days in case of 4.0 C warming.” (Uncertain)

The adverb 'likely' changes the fate of the sentence from strong to weak factual. The 'likely' creates uncertainty in readers' minds about whether the statement is true or otherwise. There is a thin layer of ambiguity in the sentence and thus place it in the category of 'Uncertain' of the facticity model.

2. “From an engineering point of view, it would **probably** be better to move everybody out of this country and resettle them elsewhere.” (Uncertain)

In the same case with the 'probably' adverb, the writer uses it in the sentence with the weak modal verb 'would,' further weakening the facticity level of the sentence.

4.3.3.2 Examples of Adverbs from the Western Media

Instances from the western media data validate my stance about the measurement of facticity scale in adverbs used in the climate change media discourse.

1. “We **absolutely** have to put pressure on those countries and those economies that have benefited from this emission with heavy industrialization to pay up and to support with the commitments that were made in the Paris Agreement.” (Absolute Truth)

The writer uses 'absolutely' adverb along with the strong helping verb 'have' and the strong modal verb 'have to' to mark this sentence to the top of the facticity scale. Though, the use of passive voice in the last part of the sentence does little impact on the facticity scale.

2. “To implement, you **actually** have to plan, you have to have detailed, concrete actions and that is exactly what Canada has, Wilkinson said.” (Absolute Truth)

This sentence is, in all aspects, very strong on the facticity scale. Strong adverb 'actually,' two times strong modal verb 'have to,' and strong helping verb 'has and have' placed it as an 'absolute truth.'

1. “The cement industry alone is responsible for about 8% of CO2 emissions, **mostly** in production.” (Certain)

This sentence in western media data is the best example of 'certain' in the facticity model using the adverb 'mostly.'

2. “The greenhouse gas with the greatest impact on warming is water vapour. But it remains in the atmosphere for **only** a few days.” (Certain)

'only', a less factual adverb, lowers the sentence's facticity in this case. Moreover, the use of 'but' further decreases the level of facticity.

1. “Tropical cyclones have **likely** become more intense over the past 40 years, the report said, a shift that cannot be explained by natural variability alone.” (Uncertain)

In this sentence, 'likely' lowers the facticity of the statement made by the western media writer. Though there is a strong helping verb 'have,' the last part creates ambiguity by using the weak modal verb and passive voice. These factors placed this sentence on the scale facticity model at the lower place, i.e., 'uncertain.'

2. “And if we cannot get to 1.5, it's **probably** going to be painful, but it's better not to give up.” (Uncertain)

Illustration 2 reveals that the usage of 'probably' adverb creates uncertainty in public, whether they believe the 1.5 degrees could harm the earth or not, and if it does, what harm it will inflict on the human being. I think the writer was himself/herself not sure about the nature of pain humans can get if the set temperature goal cannot be achieved.

4.4 Mean Comparison of the Three Lexical Categories

The mean scores presented in table 4.9 reveal unique insights into the facticity of the two media worlds based on the three lexical categories. Western writers scored higher on the 'absolute truth' scale with a score of 21.00%, while eastern media writers scored 19.57%. However, eastern media made more reasonable efforts and surpassed the western media on the 'certain' scale, with a percentage of 19.22% against western data, which scored 17.83%. These two principles of facticity excel in one or another world. On the third principle, eastern media scored lower, indicating higher facticity compared to the western media discourse. The less they score on this scale, the higher the facticity and vice versa. The score of 'uncertain' for the two worlds is 2.39% and 2.96%, respectively.

Table: 4.9

Mean comparison in lexical categories

Facticity Scale	Mean of Noun E/W	Mean of Verb E/W	Mean of Adverb E/W	Total Mean E/W
Absolute Truth	56.4/ 60.9 %	1.84/1.59 %	0.49/ 0.53 %	19.57/ 21.00 %

Certain	39.3/ 35.0 %	17.14/ 17.3 %	1.24/ 1.19 %	19.22/ 17.83 %
Uncertain	1.8/ 2.4 %	3.85/ 4.45 %	1.52/ 2.04 %	2.39/ 2.96 %
Absolute Falsehood	2.9/ 0.13 %	0/ 0 %	0/ 0 %	2.9/ 0.13 %

The principle 'absolute falsehood' has a different perspective to be analysed. Because it has not one factor to check but many factors to influence. This facticity principle gets a score only in the nouns, which is 2.9 % in eastern data and 0.13% in western data. As I mentioned, this principle also ranks high when the score is more diminutive and ranks low with a high score.

Figure: 4. 8

Mean Comparison Among Noun, Verb & Adverb

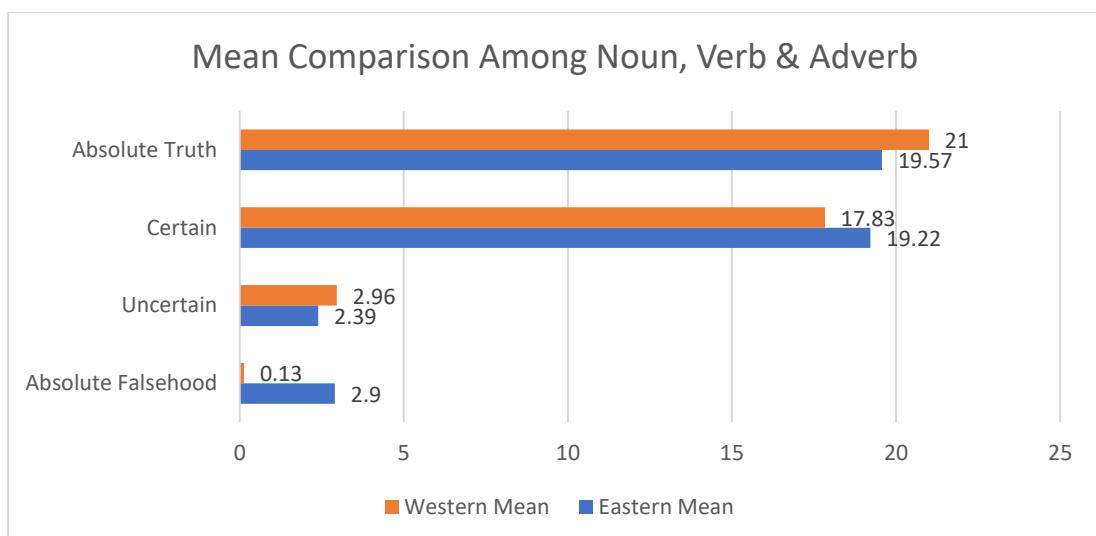


Figure 4.8 shows the same scoring result between the eastern and western worlds—the four principles of the facticity displayed in the bar chart graph. The highest bar in this figure is the western bar, with a score of 21%. The lowest bar is of western 'absolute falsehood,' which is 0.13.

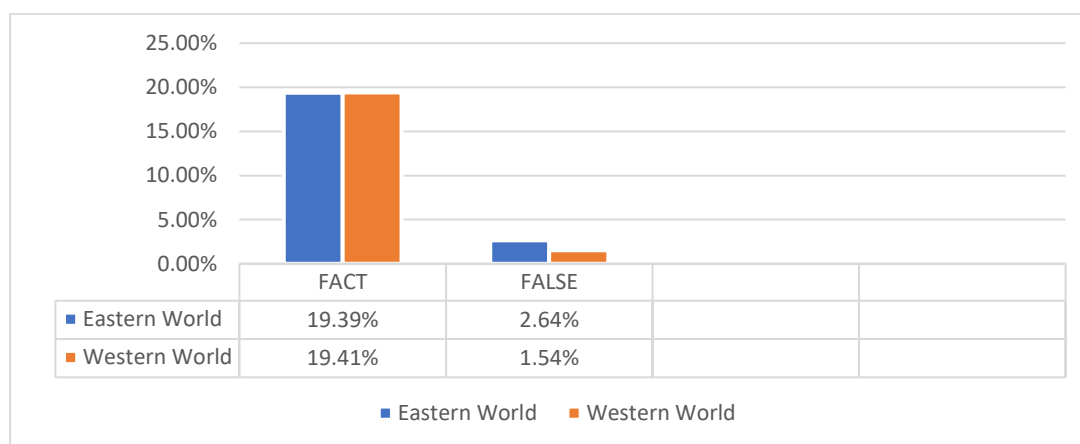
4.5 Mean Comparison of Eastern and Western World

The data of two worlds are divided into two halves, one is true, and the second is false. It is due to the four principles of the facticity model. This model has two

positive principles and two negatives. I combine positive with positive and negative with negative to achieve the grand positive and grand negative facticity principle, e.g., absolute truth + certain= Fact, uncertain + absolute falsehood= false.

Figure: 4.9

Grand Mean Comparison between two worlds



The figure 4.9 clearly shows that western data has more scores about the fact, while fewer scores are false. The eastern media has 2.64% false statements against the western media 1.54%. Further, this scale is high in 'true' scale, where western data is truer with 19.41% against the eastern data 19.39%. Therefore, it is proven that western media data regarding climate change is based on facts against eastern data.

4.6 Research Results, Interpretations, and Discussion

This novel study analyses text related to climate change in two different linguistic worlds, focusing on lexical categories and using the Stibbe facticity model. While many researchers have studied language distortion or fake news, covering different dimensions such as beliefs, social influence, conspiracy theories, expert opinion, etc., no one has previously analysed the facticity of text based on lexical categories.

4.6.1 Research Results

The study focuses on three lexical categories: nouns, verbs, and adverbs. The lexical category of "adjectives" was intentionally excluded from the study because it does not contribute to the text's facticity but only provides information about the characteristics and degrees of nouns.

The analysis of nouns in the data of both worlds yields significant results regarding facticity in climate change discourse. Two separate corpora were created and named the "Eastern Corpus" and the "Western Corpus." The Eastern Corpus comprises 92,067 words, including 23,851 nouns, while the Western Corpus comprises 113,197 words, including 29,469 nouns. There is a difference of almost 7,000 nouns between the two corpora. To determine the facticity of the text, rules were established regarding the facticity of nouns, including proper nouns, common nouns, nominalization, passivation, and pronouns (see Section 4.2.2).

The noun 'climate change' was selected from the articles about climate change and analysed for facticity. The results indicate that the 'absolute truth' score is higher in western data than in eastern data, but the 'certain' score is lower. The score for 'uncertain' is high in both datasets, while the score for 'absolute falsehood' is higher in eastern data. Overall, the data suggests that the 'climate change' noun has higher facticity in western data than in eastern data. This is because the noun has a similar mean score in the first two principles of facticity, but a difference in the last two principles, i.e., 1.1% in western data and 1.3% in eastern data. The digital numbers indicate that western data has a higher facticity score than eastern data for the 'climate change' noun.

The first two means of the four principles of facticity for all ten nouns are positive and have high scores, indicating high facticity of the text. The remaining two principles are negative in nature and have high scores, indicating low facticity of the text. The results are exciting: the first principle, 'absolute truth,' has a mean of 56.4-60.9% in eastern and western media data. The score reveals that western data is more factual than eastern data. The second principle, 'certain,' has a mean score of 39.3-35.0% in eastern and western media data. The score shows that eastern data has a higher facticity scale than western data for nouns.

Now, let's consider the third principle of facticity, 'uncertain,' which has a mean score of all ten nouns of 1.8-2.4%. Though the score is high in western media, as explained earlier, a high score means low facticity, and a low score means high facticity. Therefore, eastern data has a higher facticity score than western data. The last principle of the facticity model is 'absolute falsehood,' and the mean score of this principle is 2.9-0.13%. This score reveals that eastern data has more false information than western

data. The high score indicates that eastern data is significantly behind western data on the facticity scale. Overall, this means that when it comes to nouns, western data is more factual than eastern data.

The lexical category of verbs is very important in any language as verbs have many types and functions that may vary in different situations. Stibbe (2015) suggests in his book to only focus on modal verbs for analysing facticity, and I have also followed this approach to analyse the facticity of modal verbs in the text of two different worlds, i.e., the eastern world and the western world. I have selected eleven (11) modal verbs and classified them into three principles of the facticity model: four modal verbs are placed in 'absolute truth,' five in 'certain,' and two in 'uncertain.' Table 4.7 presents a detailed report of the results.

The result of the modal verb analysis using Stibbe's (2015) facticity model is remarkable. The mean result of the first principle of the facticity model, 'absolute truth,' is 1.84%-1.59%. This score suggests that eastern media data has a higher facticity score than the western media data. The second principle of the facticity model, 'certain,' has a score of 17.14%-17.3%, indicating that eastern data has a high facticity score against the western data. The third principle, 'uncertain,' reveals uncertainty in the writers' writing. If we look at the mean score of this principle, e.g., 3.85-4.45%, I conclude that eastern data has a lower score in the 'uncertain' principle compared to the western score. The fourth principle of the facticity model has no data in modal verbs because there is no modal verb that suggests 'absolute falsehood' in the data. Therefore, the fourth principle has no score at all for either world. Based on the overall net facticity of the modal verbs, eastern data has a high facticity score, while western data has a low facticity score.

The adverb is one of the most important lexical categories as it modifies the verb and has a significant impact on the facticity of the text in both media worlds. The corpus analysis reveals that western data contains more adverbs than eastern data, with 4632 adverbs in the western data and 3280 in the eastern data (see Table 4.8). I have selected 15 adverbs that are important in terms of climate change and frequency. I have deliberately skipped low-frequency adverbs. These fifteen adverbs are divided into three principles of the facticity model based on their meaning in context (see Table 4.8). Four adverbs are placed in the first principle, 'absolute truth,' six in 'certain,' and five in

'uncertain.' The fourth principle has no adverb that provides data, so there is no score for the principle of 'absolute falsehood.'

The score of 0.49-0.53% (see Table 4.8) indicates that 'absolute truth' is the first principle of the facticity model passed by western writers. The eastern writers have a low score, which suggests that their facticity level is lower than that of western writers. The mean score of the second principle, 'certain,' is 1.24-1.19% (see Table 4.8). The score suggests that eastern data is more truthful than western data in the second principle of facticity in terms of adverbs.

To analyse the third principle of the facticity model, the mean score of 1.52-2.04% suggests that western data has a high score, indicating a low facticity level. In contrast, eastern data has a low score, indicating a high level of facticity. If we look at the overall result of the adverbs' facticity, eastern data has the highest score and a high level of facticity against western data.

4.6.1.1 Complete Result for Three Lexical Categories

The mean scores of the three lexical categories reveal the final results of the text from the two worlds. Table 4.9 and figure 4.8 disclose the concluding results. The facticity of all three lexical categories is described here. The mean score of 'absolute truth' is 19.57% for eastern media discourse and 21.00% for western media data. The score suggests that western data is more factual than eastern data. The second principle 'certain' score is correspondingly 19.22-17.83% in eastern and western data. Here, eastern data has a higher facticity scale than western data. The third 'uncertain' principle of the facticity model score is 2.39-2.96%, which stands out again from the eastern data scale of facticity. Though the score is high in western data, the facticity scale is high in eastern data. It works proportionally, which means if one is high, the other will be low, and vice versa. The last principle is 'absolute falsehood,' and the score is 2.9-0.13%. These numbers show that eastern data has more false information than western data. Therefore, western data has higher facticity in this last principle compared to eastern data.

If we divide the data into two halves, absolute truth adds to certain because of their positivity, and accordingly, uncertainty combines with absolute falsehood due to its negativity. The first half is called fact, and the second half is called false. According

to this rule, the fact score for eastern data is 19.39%, while for western data, the fact score is 19.41%. Now, let's look at the false score in eastern data, which is 2.64% compared to the western score of 1.54%. The final score suggests that western data has a higher facticity score than eastern data. Furthermore, the false score is higher in eastern data and lower in western data. In the end, the data statistically confirm that western data is more factual and has fewer false elements. In contrast, eastern data is less factual but has more false elements.

4.6.2 Interpretations and Discussions

Analyzing media discourse is a favorite subject among scholars because the media is considered a pulse of society. To gain insight into society, one can investigate media discourse. Many works analyze linguistic devices in media language, but no one has analyzed linguistic devices from the perspective of language facticity. This kind of investigation is being done for the first time to place language on either side of the balance, i.e., fact or false, by analyzing the lexical categories of the language.

As mentioned before, it is the first time the facticity model is being used to investigate lexical categories in media discourse to find out whether language is "absolute truth, certain, uncertain, and absolute falsehood." Arran Stibbe (2016) mentioned these four principles in his book "Ecolinguistics, Language, Ecology, and the Stories We Live By," but he did not provide a framework to analyze the lexical categories. He gave five linguistic devices to check the facticity of the text, one of them being modality, adverbs, and quantities. There were no fixed rules to use these devices for facticity. Therefore, I have adapted some rules; mentioned in facticity model, for the lexical categories to investigate the facticity of the media language. I have divided nouns, modal verbs, and adverbs among the four principles of the facticity model (see section 4.2.2).

Analysing media discourse is a favourite subject among scholars because media is considered a pulse of society. To get an insight into society, investigate the media discourse. Many works analyse linguistics devices in media language, but no one has analysed linguistics devices from the perspective of the facticity of the language. This kind of investigation is done the first time to place language in either part of the balance, i.e., fact or false, by analysing lexical categories of the language.

As mentioned before, it is first to use the facticity model to investigate lexical categories in media discourse to find out whether language is an 'absolute truth, certain, uncertain and absolute falsehood.' Arran Stibbe (2016) mentioned these four principles in a book, 'Ecolinguistics, Language, Ecology, and the Stories We Live By.' But he does not give a framework to analyse the lexical categories. He gives five linguistics devices to check the facticity of the text; one of them was modality, adverbs, and quantities. There were no fixed rules to use these devices for facticity. Therefore, I set some rules for the lexical categories to investigate the facticity of the media language. I divided nouns, modal verbs, and adverbs among four principles of the facticity model (see section 4.2.2).

This study investigated the lexical category of nouns, and the report on their frequency did not differ from other lexical categories. As the main western data was significant, the lexical categories' data were also large (see figure 4.1). No noun could be placed under any of the four principles of facticity. Nevertheless, when attached to many components in a sentence, it can be declared as one of the four principles (see section 4.2.2). As far as facticity is concerned, the study found that western data regarding nouns were more factual than eastern data. Eastern data had false information and a low score on the facticity scale. The disparity in the frequencies of nouns, especially absolute truth and absolute falsehood, creates doubts in people, which may make them stop believing in the issue of climate change.

Verbs are very dynamic lexical categories among others. The verb has two main types: main verbs and auxiliary verbs. Although some examples in Stibbe's (2015) book talked about the use of verbs, he did not explain them explicitly, except for the modal verb. Richardson (2007) declared modal verbs from low commitment to high commitment but never concretely assisted in placing modal verbs under any of the four principles of the facticity model. I divided all eleven modal verbs among three principles of facticity, i.e., absolute truth, certain, and uncertain. The modal verb frequency was larger in western data than in eastern data (see table 4.2 and figure 4.3).

The most incredible lexical category is adverbs because they can single-handedly change the meaning of a sentence. In this study, adverbs were collected from both Western and Eastern media sources, and as expected, Western data had more adverbs than Eastern data (see Table 4.1 and Figure 4.2). Many adverbs were used in

the corpora of media discourse, but 15 adverbs were selected for analysis to cover all principles of facticity and their frequency. These 15 adverbs were divided into three categories of the facticity model: four (4) adverbs in "absolute truth," six (6) adverbs in "certain," and five (5) in "uncertain" (see Table 4.8). Eastern data dominated the comparison because they had more certain adverbs than Western data. Moreover, in the principle of "uncertain," Eastern data had a lower score, indicating less uncertainty in the text of Eastern media discourse.

The most significant contribution of this study is providing a scale for analysing a text in terms of its truthfulness in the existing body of knowledge. Furthermore, it introduces the facticity model for the first time for climate change articles from two worlds, i.e., the Western world and the Eastern world. This study also provides a framework of lexical categories divided into absolute truth, certain, uncertain, and absolute falsehood. In conclusion, Western data was found to be more aligned with the facticity model and had a higher score than Eastern data. This is a real service provided by the media in terms of portraying the climate change issue in its true spirit, i.e., using language that is more truthful and likely to make readers more determined to address the problem. On the other hand, Eastern data was found to be less accurate and portrayed climate change in articles with weak linguistic elements, which lessened the public's resolve and eagerness to combat the issue. Additionally, the passivation study revealed that Eastern data used more passive voice sentences than Western data, which made the text difficult to read and led to reservations about the phenomenon of climate change (see Table 4.5 and Figure 4.4).

Media manipulation is a tactic used by individuals or organizations to influence the perception and opinions of the public. The use of particular nouns, modal verbs, adverbs, and other linguistic features is a powerful tool for media manipulation.

Nouns are a critical part of any sentence as they describe people, places, things, or concepts. The media can manipulate the use of nouns to shape the audience's perception of an event or issue. For example, if the media wants to portray a climate change phenomenon negatively, they may use dehumanizing nouns to describe it, such as "climate change is a **hoax**," "climate change is not an **anthropogenic** phenomenon," or "**greenhouse gases** are due to cows' flatulence." Conversely, the media may use positive nouns to portray climate change favorably, such as "**Mother Earth**,"

"**ecosystem**," or "**environment**," which should be protected by mitigating greenhouse gases and the effects of climate change (see section 4.3.1.1 and 4.3.1.2).

Modal verbs are another language tool that can be used to manipulate the media. Modal verbs are used to indicate the degree of certainty or obligation in a statement. Words such as "**must**," "**shall**," and "**have to**" can be used to create a sense of urgency, obligation, and importance in the audience's mind. For example, if the media wants to highlight a climate change issue, they may use the modal verb "**must**" to suggest that climate change is an urgent issue that requires immediate attention. Alternatively, they may use "**may**" or "**might**" to suggest that the issue is not as urgent or important (see section 4.3.2.2 and 4.3.2.3).

Adverbs are words that modify or describe verbs, adjectives, or other adverbs. They can be used to change the audience's perception of an event or issue. For example, the media may use adverbs such as "**absolutely**," "**mostly**," or "**actually**" to portray a climate change concept as a threatening issue that needs to be solved urgently. Conversely, the media may use adverbs such as "**only**," "**likely**," or "**probably**" to portray a weak or uncertain concept regarding climate change, which may weaken the perception of the general public about the need to mitigate the effects of climate change (see section 4.3.3.1 and 4.3.3.2).

In conclusion, the use of particular nouns, modal verbs, adverbs, and other language techniques is a powerful tool for media manipulation. It is important for media consumers to be aware of these techniques and to critically evaluate the information they are presented with to form their opinions and beliefs.

4.7 Findings of the Research

The researcher has examined and summarized the findings of the extensive examination of climate change media discourse in the Eastern and Western media, as well as the conclusion. The findings indicate how the Eastern and Western media construct the facticity of the text using words that reflect the text as absolute truth, certain, uncertain, or absolute falsehood. The following are the research findings:

The corpora of the two worlds were divided based on the lexical categories, i.e., nouns, verbs, and adverbs. The study found that the frequency of nouns (23851) was

lower in the Eastern corpus than the Western corpus (29469). Although the study collected an equal number of articles from equal numbers of newspapers and countries, the Western corpus was still more extensive in terms of the number of words than the Eastern corpus. The total Eastern corpus was 92,067 words, while the Western corpus had a distinctly additional 20,000 words, totaling 113,197 words. Among more than 50,000 nouns, the study selected only ten nouns specifically related to climate change. Among those ten nouns, 'climate change' had the highest frequency in both corpora, with 531 in the Eastern data and 793 in the Western data. The lowest frequency in nouns was 'anthropogenic,' which was not used in the Eastern data but was used only once in Western media articles (see Figure 4.1).

An important lexical category is the verb, as without it, a sentence cannot be complete. The frequency of verbs in the corpora of both worlds was 8895 in the eastern data, while it was 13990 verbs in the western data. These verbs were further divided into main verbs, helping verbs, and modal verbs. My study focused on modal verbs, and the frequency of modal verbs was 1100 in the eastern data, whereas it was 1355 in the western data. The interesting thing was that the net percentage of modal verbs in the eastern data was higher than in the western data, i.e., 12.36% and 9.68%, respectively (see table 4.1).

It was found that the frequency of adverbs in western media discourse was higher than that in the eastern data, e.g., 4.09% and 3.56%, respectively. Eastern writers used 3280 adverbs in their articles, whereas western writers used 4632 adverbs. I selected only 15 adverbs to determine their frequencies and facticity. These 15 adverbs have a crucial and significant impact on the text's facticity (see table 4.2). Furthermore, these adverbs have higher frequencies compared to others.

Lexical categories have unique functions and rhetorical purposes in the text, and writers use these words carefully to convey their intended message. As discussed in chapter 3, the construction of the fifth theory is that "thought determines language to rule the world."

Many scholars who study the construction of reality agree that socio-economic factors play a significant role in constructing reality. Therefore, they have adopted approaches such as constructivism and modern constructivism, which emphasize the

influence of society in shaping reality. In contrast, Stibbe (2015) and this study present a different perspective on reality construction. The fifth theory, which is constructed in this study, gives cognitive processes a central position, enabling individuals to generate sentences without the influence of their social upbringing, economic status, or prior knowledge (see section 3.1.2.1).

Stibbe (2015) discusses facticity and how our beliefs about a particular text or description determine its truth or falsity. The mind determines language and is therefore an essential factor in the facticity model, which includes the principles of absolute truth, certainty, uncertainty, and absolute falsehood. Our mind prompts the use of certain words, and it can decide whether a text or language is true or false. However, it is possible that reality may differ from the string of words that we use to describe it.

Due to these clusters of words, I have divided sentences into nouns, modal verbs, and adverbs to find out the facticity of the language, especially in media discourse regarding climate change. People use such words that can change the fate of a country or creatures. Furthermore, these strong words producers bring mother earth on the verge of destruction by declaring carbon emissions or global warming harmless to the earth.

To fit the text into the four principles of facticity, I have divided nouns, modal verbs, and adverbs into four parts. Each part represents a principle of facticity, e.g., common nouns, nominalization, passivation, weak adverbs, and weak modal verbs, which are considered uncertain (see section 4.2.2).

In the facticity model used in this study, the lexical category of "nouns" was examined for facticity. The findings were interesting. According to the rules established in the facticity model framework, western data regarding nouns was considered more absolute truth than eastern data. Additionally, western writers used less absolute falsehood data than eastern writers. The numbers showed that western data had a 60.9% absolute truth scale, while eastern data had a 56.4% scale. In contrast, eastern data was considered more certain (39.35%) and less uncertain (1.8%) compared to western data, which had 35.4% certain and 2.4% uncertain data (refer to table 4.4). In addition, the readability scale favored western data, as eastern articles were easier to read.

Furthermore, eastern data had more passive sentences than western data (refer to table 4.5 and figure 4.5).

The modal verbs were divided based on their mood and usage in the facticity model. The eastern data showed higher levels of facticity, certainty, and lower uncertainty than the western data. The western writers used modal verbs that weakened the facticity of the sentences compared to the eastern writers. The absolute truth scale of western data was 1.59%, while the eastern scale was 1.84%. The 'certain' principle of facticity model in the eastern data was 17.14% higher than the western scale of 17.3%. Moreover, regarding the 'uncertain' principle, the eastern data was 3.85% and the western data 4.45% (see table 4.7 & figure 4.6).

The findings of the lexical category 'adverb' favoured the western media in the first principle of the facticity model, i.e., absolute truth. The mean of the adverbs about the first principle, the absolute truth of eastern data, was 0.49, while the western scale was 0.53%. Contrary to that, eastern data was 'certain' (1.24%) regarding the usage of adverbs against the western data, which was 1.19%. Furthermore, eastern data was less uncertain (1.52%) than western data (2.04%). The western writers used more adverbs that were weak in facticity. Overall, the facticity of adverbs was higher in the eastern articles (see table 4.8 and figure 4.7).

The final finding of the study revealed that western data was closer to fact and further from falsehood. Conversely, eastern writers used lexical categories that reduced the facticity of the data. The mean percentage of factual data in the two regions was 19.39% for the eastern world and 19.41% for the western world. The false index was higher in the eastern bar chart, which was 2.64%, compared to the western bar chart, which was 1.54% (see section 4.9 and figure 4.9).

4.8 Chapter Summary

The data analysis chapter has covered almost all data analysis, comparison, tables, and figures. First, I frame some principles related to the facticity model that would help analyse data accordingly. In the second part, the data have been compared and analysed its frequency. The facticity model was applied to gather data and trace the result in the third part of the chapter. It was found from the result that western data was more factitious than eastern data.

CHAPTER 5

CONCLUSIONS, AND RECOMMENDATION

This chapter aims to provide a conclusion for the entire investigation and evaluate the extent to which the study's goals and objectives were achieved. The introduction, research questions, objectives, samplings, and findings are summarized in this section. The conclusions are supported by the study's goals and research questions, and the study's conclusions and recommendations are covered in sections 5.1 and 5.2.

The current study aimed to determine the facticity of Eastern and Western Media discourse and how they constructed facticity using different linguistic features. To achieve the objectives and answer the research questions, the world was divided into two parts: Eastern and Western worlds. Seven countries were selected from each world, with three newspapers each. Five articles related to climate change were chosen using keyword searches from each country, resulting in a corpus of 210 articles comprising over 200,000 words. The Eastern media corpus contained 92,067 words, while the Western media corpus contained 113,197 words. The newspaper data spanned five years, from 2017 to 2021. A purposeful or judgmental sampling method was used to collect the data.

The study used Potter's (1996) fact construction theory as a theoretical framework. Additionally, Baker's (2006) concordance model aided in determining the frequency of lexical categories. The facticity model developed by Stibbe (2015) served as the analytical framework, with modifications made to incorporate nouns and adverbs. While the original model focused only on modality, this study utilized nouns, modal verbs, and adverbs to assess how these lexical categories contribute to constructing the facticity of the text. This study is the first of its kind to explore the facticity of text solely through lexical categories, making it a novel and ground-breaking discovery in this field.

The study aimed to determine the frequency of lexical categories used in the climate change articles of the Eastern and Western worlds using Baker's (2006) concordance model. Additionally, the study sought to identify the rhetorical and functional purposes of these lexical categories in the articles. The third objective was

to highlight ideological differences between the two worlds. The facticity model was used in both media discourses to index the text based on four principles: absolute truth, certain, uncertain, and absolute falsehood. The intention was to reveal how the selected news articles constructed facticity about climate change in the Eastern and Western worlds. The study aimed to explore the reality of the text regarding climate change and how the Eastern and Western media manipulated the language to weaken the anthropogenic stance of the Paris climate change agreement and UNO protocol. Furthermore, the study aimed to identify how the writers of the articles in both media discourses arranged their words in a way that appeared true but, in reality, reflected the narrative of anti-climate change organizations.

5.1 Conclusions

Rishtiya chi razi nu daroghu ba kely wrankry wi (Pashtu Proverb)

When facts come to the surface, the lie destroys the village.

Language is constantly being used as a tool to rule people. People with high intellectuals serve the power to manipulate the facts by distorting the language with linguistic features. The concocted facts brought destruction to humans and other species also. Using language with care can bring peace into the world and secure our mother earth from the catastrophe of climate change. That is why I employed Stibbe's (2015) facticity model in this study to measure the language and index it as a fact or false. For this purpose, I collected 210 articles of eastern and western media discourse about climate change through a judgement sampling tool to place the text as an absolute truth, certain, uncertain, and absolute falsehood.

The western data was more extensive than the eastern data and had fewer passive sentences, but it was also more challenging to understand because the readability ease scale was high. Moreover, the frequency of nouns and adverbs was high in western data and low in eastern data, with one exception regarding modal verbs, where the percentage of usage was higher in eastern data. Another advantage for eastern writers was the free flow of information, with many eastern newspapers offering free access to articles and subscriptions to as much information as possible. This was not the case with many western newspapers, which often restricted access to articles and information.

In terms of facticity, western media discourse had a higher scale of facticity in nouns compared to eastern data. Additionally, western writers used modal verbs more frequently to increase the facticity scale, and the mean percentage of absolute truth was higher in western data compared to eastern data. On the other hand, eastern writers used adverbs more frequently to increase the facticity scale. Overall, the facticity measurement of the text from both worlds revealed that the western data showed more facticity than the eastern data, and false data was less common in western data compared to eastern data.

The study did, however, cover past works and draw insights from them, but its major goal was to investigate the answers to the following three research questions:

1. Which lexical categories appear in the corpora at significantly different frequencies?
2. What rhetorical or functional outcomes do lexical category clusters in the corpus produce?
3. What role do lexical categories in corpuses have in indexing the Western and the Eastern ideological perspectives on climate change?

The study has investigated the following questions and provided insightful answers. The first research question has been answered by analyzing the frequency of three lexical categories: nouns, verbs, and adverbs. Nouns had the highest frequency in both eastern and western media, with 23851 and 293469 occurrences, respectively. Verbs had the second highest frequency, with 8895 occurrences in eastern data and 13990 in western data. Adverbs were used in the data in negligible numbers, with only 3228 in eastern articles and 4632 in western articles.

The answer to the second question was to find the purpose of these clusters of lexical categories in describing corpora. The media's primary purpose in using these lexical categories was to construct a representation of reality in the text regarding climate change. The truthfulness of the description is affected by the media's use of these words. The manipulation of words, distortion of facts, and the use of weak verbs, nouns, or adverbs reduce the facticity of the text. Eastern media writers used weaker lexical categories more frequently than western media writers.

The ideological perspective of both worlds regarding climate change was different. In the third question, Western media showed more concern about this issue,

while Eastern media mostly replicated Western research and even their articles. Additionally, Western media published more articles and longer ones compared to Eastern media. Furthermore, Western media demonstrated a greater understanding of the seriousness of climate change than Eastern media, as evidenced by the special heading/button for climate change at the top of their website pages.

This study introduced a novel perspective on text by constructing facticity using linguistic features. Truth is often considered a plural concept that cannot be reduced to a single truth; however, this study challenges that notion. With significant linguistic features in text, truth can now be seen as singular and enduring. Ultimately, we must use language in a way that reveals only the truth and use words carefully to promote harmony among the creatures living on Earth. It is language that has the potential to disrupt the world's peace, so we must carefully choose our words to mitigate the effects of climate change.

5.2 Limitations of the Study

Although many countries have numerous newspapers, this study was only able to examine seven states and three publications due to time restrictions. However, the limited number of countries and newspapers may not provide an accurate representation of the overall situation. Additionally, the study only analyzed lexical categories rather than grammatical categories, and the analysis was limited to nouns, modal verbs, and adverbs. Therefore, it may not accurately reflect the facticity of climate change text. For a complete assessment of facticity, all lexical and grammatical categories need to be analyzed. Moreover, there were technical issues with the Antconc software while processing tagged and plain text file formats, which resulted in different frequencies of lexical categories in the two files. To obtain a unified result, frequencies were obtained using a plain text file rather than a tagged file.

Since this study is ecological, it is restricted to articles about the environment, particularly those related to climate change, even though media discourse covers many other topics. The data was limited to five years, from 2017 to 2021, which was a significant period for climate change awareness. Additionally, in this pandemic era, COVID-19 has had some positive effects on our ecosystem by ensuring the safety of

other species. Therefore, the study is limited to the issue of climate change in media discourse.

5.3 Recommendation

The media plays a crucial role in conveying the reality of any situation and has a significant influence on how people perceive events worldwide. In recent years, the media has been particularly crucial in reporting the truth regarding climate change. This study draws conclusions about how the media in the East and West have portrayed climate change and its effects on people and other species.

Aside from the first responsibility of the media to portray climate change accurately, its second most important obligation is to report the truth. It has been observed that the media can manipulate the truth and terminology. Therefore, it is the media's responsibility, whether it be print, electronic, or social media, in the West or the East, to accurately report the reality and the truth. Whatever social group the media belongs to, its primary goal should be to emphasise the facts and reality.

While striving to report news with facts and reality, it is crucial to consider the code of ethical conduct. Providing the audience or readers with inaccurate or false statistics misleads them, as language can be used to manipulate the facts by highlighting certain points while downplaying others. Media organisations need to be careful in maintaining objectivity and not pandering to the public's emotions when covering contentious issues like climate change and global warming.

Climate change and global warming are emerging issues in ecolinguistics. As ecolinguistics is an emerging discipline in linguistics, new researchers can explore facticity in the usage of adjectives. Furthermore, there is a need for a solid scale of measurement of facticity. While this study makes a modest contribution, further research is necessary to refine it further. I recommend exploring other areas of the facticity model, such as expert opinion and stake, among others. Researchers can also measure the damage caused by less factual text to humans and other species.

There is a need to analyse the text of the Paris agreement on climate change and the UN protocol on climate change. The exciting area that needs to be explored is

finding the facticity of scientific research papers on climate change. The speeches made by political leaders at the UN General Assembly or international organisations on climate change need to be analysed using the facticity model. For the first time, we have a tool to measure the facticity of any description's text. It is a solid scale of two panes that can measure language through its linguistic features, such as lexical categories. This study will open up new areas for finding facticity in any text, which can determine the text's language as truth or falsehood linguistically.

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