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**Digital Ecology: Linguistic Framing of Nature and Biodiversity
in Social Media Discourse**



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Abstract

This study examines the linguistic and multimodal construction of nature and biodiversity in Pakistani social media discourse, with a particular focus on culturally grounded expressions originating from the Hindu belt. Drawing on ecolinguistics and framing theory, it explores how ecological meanings are co-constructed through language, visual representation, and platform-specific affordances, and how these meanings reflect underlying cultural ideologies. Using a qualitative design, 200 public posts (100 from Twitter/X and 100 from Instagram) published between January and June 2024 were purposively selected and analyzed through an integrated ecolinguistic and multimodal discourse framework. The analysis identified four dominant ecological frames: Nature as Victim, Nature as Home, Humans as Guardians, and Nature as Economic Resource. Twitter discourse was characterized by crisis-oriented rhetoric and activist metaphors emphasizing urgency, while Instagram foregrounded aesthetic beauty, emotional attachment, and spirituality through visually rich content and bilingual captions. The findings reveal that environmental discourse in Pakistan's digital ecology is shaped by a balance between rational urgency and affective engagement, mediated by the platform's affordances. The study extends ecolinguistics into a multimodal, non-Western context, underscoring the value of culturally and linguistically grounded approaches to environmental communication.

Keywords: Ecolinguistics; Framing theory; Multimodal discourse; Environmental communication; Social media; Twitter; Instagram; Pakistan; Ecological narratives; Linguistic framing

1. Introduction

Over the past decade, scholars have widely observed that social media platforms have become critical sites for the construction and circulation of environmental meanings. Rather than relying on traditional information channels that operate through top-down dissemination, it is now possible, as researchers note, for platforms such as Twitter (X) and Instagram to enable ordinary users, activists, and institutions to co-create ecological narratives through multimodal expression, including text, hashtags, emojis, and imagery. A digital ecology, which is what is proposed by Jones and Hafner (2021)

and Stibbe (2020), is a set of communicative ecosystems that express a convergence of linguistic, visual, and technological resources through which cultural and agricultural communities make up their vision and understanding of the natural environment. It is crucial to understand such linguistic practises as, as ecolinguists always point out, language in digital contexts does not reflect reality, but forms it.

In this context, the linguistic entreprenuring of nature and biodiversity is claimed to impact greatly on the perceptions of ecological responsibility, according to the researchers. Based on framing theory, Lakoff (2010) argues that words and metaphors cause the mobilisation of mental structures that show highlight on a particular bit of reality at the expense of another. Taking the comparison of climate change as a war and therefore an act of urgency and conflict versus conceptualising climate change as a journey and therefore gradual development and group purpose. Through the repetition of the linguistic patterns as Entman (1993) articulates, these frames are perpetuated and regularised as time goes by into the dominant narratives of a culture. Stibbe (2020) suggests, in terms of ecolinguistic issues, that these kinds of narratives, which he calls the storeys we live by, may either be helpful or harmful to the ecological well-being, insofar as they either provoke a feeling of empathy towards the living world or justify the exploitation thereof.

With the advent of the digital media, the scholars suggest that there has been a phenomenal rise in the visibility and spread of these so-called storeys. The stories are reduced to captions, tweets and hashtags in online space which, according to Zappavigna (2012), spread quickly across networks and acquire an ideological impact due to duplicate and visibility. Photos of forests, and emojis and hashtags (e.g., SaveNaturePakistan or BiodiversityMatters) engage written text and generate affective associations with nature, what Kress and van Leeuwen (2021) define as multimodal meaning-making. The analytical problem that emerges, according to Machin (2013), of analysing such complex semiotic assemblage is how methodological approaches can manage both linguistic and visual aspects, the type of analysis that ecolinguistics, especially when used in conjunction with multimodal discourse analysis, is best placed to undertake.

Such an investigation, scholars may posit, can be fruitful especially within the context of Pakistan. Among the serious problems encountered by the country are deforestation

and biodiversity decline, water shortage, which Hussain, Qureshi, and Farooq (2023) refer to as intensification of the rapid urbanisation process and the ineffective implementation of environmental protection policies. Despite the fact that these issues have become mainstreamed in the discourse, Mahmood, Nisar, and Ali (2022) note that a significant part of the current literature on the Pakistani environmental communication takes the form of content analysis and metrics of participation instead of analyzingnaissance linguistic frames. In addition, Rafi (2020) emphasises the fact that the multilingual digital aspect of Pakistan that inhabits the intersection of English, Urdu, Punjabi, and regional languages gives rise to hybrid discourses that have been studied hardly in relation to ecolinguistic studies. A multilingual complexity, according to the researchers, does not only affect the types of environmental issues discussed, but also how they are constructed using metaphors, evaluative language, and affective positioning which are all constituents of environmental awareness.

At a larger scale, Fill and Penz (2018) suggest that ecolinguistics has grown to be an interdisciplinary discipline, which is interested in studying the mutual dependency of the relationship between language and ecology. Riding on this theory, researchers like Stibbe (2020) underline the fact that ecolinguistics is not only focused on analysing discourse concerning ecological issues, but also concerned with its own moral judgement, whether existing discourses facilitate or degrade ecological sustainability. Nonetheless, the majority of empirical ecolinguistic studies remain Euro-American, centred in the English-language print and broadcast media. The fact that the questions posed by ecological linguists can be applied to the digital territory of South Asia thereby substantiates a critical gap in geography and methodology, by enables the posing of some questions regarding the influence of the local cultural values, religious ethic of stewardship (khalifa) and language diversity in its contribution to discourse of the environmental space on the Web. This kind of attention is required to an in depth comprehension of the global environmental communication beyond the western paradigm.

Besides its research on ecolinguistic theory and analysis development, the social network discourse analysis provides insightful information on practise. Since they are the culturally-specific frames, metaphors, as well as multimodal strategies that best contribute to the ecological empathy, determining them can aid the

understanding of what would make the environmental campaigns even more culturally relevant. Pakistanese organisations and activists should take such dynamics into account in their words to facilitate digital interaction and sustainable behaviour. To this end, the study adds value, both at the theoretical, as well as the practical levels. At the theoretical level, it is a combination of three research methods of ecolinguistics, framing theory and multimodal analysis. At the pragmatic level, the study shows the relations between online language practises and the development of shared ecological consciousness.

The purpose of the given research is, then, to study the linguistic expression of nature and biodiversity in Pakistan as shown in Twitter and Instagram. It aims to determine which specific linguistic and semiotic assets users rely on in order to build ecological meaning and negotiate environmental identity on the digital areas. This study is informed by the following research problem, objectives of the research, and research questions that guide the research.

1.1 Statement of the Problem

The social media has proven to be one of the most essential areas of environmental activism in Pakistan; however, the influence of the production of language and image on people in terms of their vision of nature and biodiversity is underresearched (Mahmood, Nisar, and Ali, 2022). Ecolinguistic studies have been rather biased towards Western monolingual situations; therefore, multilingual scenarios, including the example of the interaction of English, Urdu, and the regional languages on the internet in Pakistan are underrepresented (Fill and Penz, 2018; Stibbe, 2020; Rafi, 2020). It has been proposed by framing theory that the linguistic and semiotic decisions are significant in how environmental issues are interpreted and their respective audiences emotionally respond and such analysis is therefore necessary to attain a subtle comprehension about ecological awareness (Lakoff, 2010). Thus, the gap that requires filling is a linguistic-grounded study on the social talk of nature and biodiversity in Pakistan as discussed through the social media.

1.2. Research Questions

1. How nature and biodiversity linguistically framed in Pakistani Twitter and Instagram discourse?
2. What multimodal strategies—such as the use of hashtags, emojis, and imagery—

complement linguistic framings to construct ecological meaning in these digital platforms?

3. How do these framings and multimodal strategies reflect underlying cultural and ideological orientations toward the environment in Pakistan's social-media ecology?

1.3 Significance of the Study

This investigation extends beyond the scope of ecolinguistics into the multilingual and digital context in Pakistan to explore underrepresentation of South Asian voices by questioning the linguistic and pictorial constructs of nature and biodiversity on Twitter and Instagram platforms (Fill and Penz, 2018; Stibbe, 2020). The results facilitate the body of theoretical understanding concerning the existing language-ecology relations, besides offering suggestions regarding the practical implementation of culturally empathic language of communication designs in the setting.

2. Literature Review

The creation of digital media has transformed the ways in which the environmental stories are told, distributed and interpreted. In this transformation, the language is instrumental in helping form the societal attitude of environmental issues, and hence, connects the disciplines of ecolinguistics, framing theory, and digital discourse analysis. The present examination of the linguistic depiction of nature and biodiversity in Pakistani social media serves as a means of theoretical and empirical input in the specified areas, which indicates the notable gap that is defined in the existing literature.

2.1. Ecolinguistics and Framing: Theoretical Foundations

Ecolinguistics gives theoretical application in the study of how language is applied in developing human relationships with the environment. Rooted in systemic-functional linguistics and ecological thought, the field strives to shed light on "the stories we live by" that either engender the failure or maintenance of ecological systems (Stibbe, 2021). Alexander (2014) distinguishes between two complementary approaches to work in ecolinguistics: the study of explicitly ecological discourse (i.e., texts concerning environmental issues) and an ecological survey of all discourse (i.e., examining language for its environmental implications). It is this duality that allows researchers to study the overt or covert linguistic mechanisms that mold a

consciousness towards the environment.

The theory of framing complements this perspective, developed in the field of cognitive linguistics, which explains the influence of language structure on interpretation. Lakoff (2010) argues that conceptual frames influence people's views of problems related to environmental issues. The discussion of sustainable communication focuses on framing an issue in terms of morality, rather than presenting facts. Lopez-Garcia (2011), Courtina served as the key source and news media in this paper.

The conceptual core of this study is the combination of ecolinguistics and framings. Ecolinguistics offers a critical lens for understanding and analyzing the relationship between discourse and ecocentric values, drawing on a theory that explains the cognitive mechanisms underlying such persuasive and memorable discourse. A combination of these frameworks will allow to better comprehend the effects of linguistic and semiotic choices on social media that contribute to the meaning-making in ecological terms.

2.2 Multimodality and Environmental Discourse on Social Media

The social media is multidimensional, which implies the new dimensions into which ecolinguistic inquiry should be conducted. The applications such as Instagram and Twitter represent text and visual communication, meaning scholars should consider how the meanings are co-constructed using words, images, emojis, and hashtags to facilitate the meaning-making environment (Kress and van Leeuwen, 2020). San Cornelio et al. (2024) enlighten us that Instagram activism is commonly based on visual accounts that cause affective responses and community unity regarding the problem of environment. Similarly, Reijnierse et al. (2025) prove that the application of linguistic metaphors in environmental communication influences the interpretation of the message and the emotional reactions, and this is why linguistic framing should be considered in a way that goes beyond the traditional, text-centric media.

The recent multimodal analyses present concerns regarding how to frame the distinction between the institutional and the activist accounts. Tomber (2023) describes how organisations to gain credibility on instagram apply a blend of scientific authority and aesthetic images, like the space agency The National Aeronautics and Space Administration (NASA). Conversely, grassroots

environmental narratives are more empathetic, more identity-driven, in their framings of linguistic affect and it appeals to personal desire and feeling.

Such studies support that the multimodal affordances (colour schemes, emojis, typographies, and hashtags) have a dynamic interaction with linguistic features to create ecological narratives (Lopez-Rabadan, 2022). Tornberg (2025) further argues that the aesthetics of climate communication in digital media play a role in how well it is received by an audience, so that the visual framing is not separable from the linguistic choice. The intersection between multimodal analysis and ecolinguistics presents a rich environment for exploring how discourse about nature and biodiversity is realized and gains traction in online spaces.

2.3 Ecolinguistics, Environmental Discourse, and the Pakistani Context

Although ecolinguistics is well-developed in Europe, its use is limited in South Asian resorts. Pakistani studies on environmental communication have been dominated by quantitative content analyses and audience engagement, and are underdeveloped from the perspectives of linguistics and semiotics (Mahmood, Nisar, & Ali, 2022; Hussain, Qureshi, & Farooq, 2023). Mahmood et al. (2022) identified Twitter as a new platform for environmental activism but found a lack of interest in the underlying linguistic framing strategies that guide meaning-making. Similarly, in a study by Hussain et al. (2023), which examined the environmental awareness of youth based on survey data, the authors failed to analyze the discursive patterns that lead to the formation of ecological awareness.

More recent works in ecolinguistics in Pakistan have begun to address these lacunae. Sadiq, Alam, and Rehman (2025) conducted a qualitative analysis of environmental narratives in Pakistani print and digital media, finding recurring metaphors in which humans are portrayed as either stewards or dominators of nature. Their results indicate that there has been some anthropocentric bias in covering the environment, where there is a need to carry out research with the ability to predict ecocentric or biocentric discourses. Habib (2024) used an ecolinguistic approach to examining the Pakistani newspapers on flood coverage and how the country reports on the frequency of a natural disaster as an unavoidable event instead of the consequence of human environmental degradation. According to Habib, this kind of framing undermines human responsibility and shifts towards the wrong direction

when it comes to structuring reform.

Additionally, the significance of language diversity in the sphere of ecological communication is the understudied characteristic of the Pakistani discourses. One literature review conducted by Rafi (2024) showed that the presence of ecological expressions that bring native and first-language views into sustainability messaging language increases its formality and cultural authenticity. As Pakistan is a multilingual country with Urdu, English, Punjabi, Sindhi, and numerous other regional languages spoken, the linguistic framing study on social media may be used to comprehend the localization of ecological meaning requires operation beyond linguist borders.

2.4 Methodological Approaches and Research Gaps

Methodologically, in the analysis of discourses, fecund ecolinguistic and framing studies employ a plurality of analytical instruments, based on critical discourse analysis, multimodal discourse analysis, and corpus-based methodologies. Stibbe (2021) and Alexander (2014) support qualitative paradigms, including textual description paired with ideological critique, while Kress and van Leeuwen (2020) suggest frameworks for analyzing the joint construction of meaning between textual and visual modalities. Research on social media, however, breeds new challenges: its content is ephemeral, multimodal, and user-created. Lopez-Rabadan (2022) suggests using digital ethnography and multimodal analysis to capture the participatory nature of online discourse that is inherent in it.

Despite this heterogeneity in methodology, several gaps remain. First, few studies have attempted to conduct a qualitative ecolinguistic analysis of Pakistani social media discourse, resulting in a limited understanding of the linguistic construction of ecological meaning. Second, although the use of multimodal investigations helps to emphasise the importance of the visual frame, there is less integration of these sorts of investigations with a theory like ecolinguistics developed in the Pakistani context. Finally, the cultural and linguistic pluralism of Pakistan is mainly absent from the existing field of ecolinguistics, which has been disproportionately based on monolingual English data.

The ongoing investigation aims to fill these gaps by analyzing the framing of nature and biodiversity (linguistically and multimodally) on Instagram and Twitter in Pakistan. It is hoped that this will contribute to ecolinguistic theory by widening its

empirical field of investigation and to applied environmental communication by identifying culturally based linguistic strategies that enhance ecological awareness.

3. Methodology

This research employs a qualitative ecolinguistic research methodology to investigate the language and multimodal framing of nature and biodiversity in Pakistani social media discourse. Situated within the interpretive paradigm, meaning construction rather than quantitative measurement is given priority in this research, which relies on language and visual semiotics. The concepts of ecolinguistics, theory framing, critical discourse analysis, and multimodal discourse analysis define the analytical framework, which helps to comprehend the ways in which ecological values and ideologies are expressed in the digital texts.

The data set contains publicly available Twitter and Instagram posts, which were published between January 2024- June 2025. The data set comprises 200 posts in order to sample them at the same rates. The posts were carefully chosen depending on their compatibility to environmental themes, their Pakistani origin and use of English, Urdu or Bilingual language. The data collection occurred in the period between June and August 2025 through hashtag-based and manual browsing. All the posts are stored in NVivo version 14 in archived format together with metadata and the visual contents are saved in order to be analysed as a multimodal result.

The analysis centred on the linguistic devices of framing, such as metaphor, personification, evaluative language, and creation of agency and the visual aspects of the new media, such as representational, interactive and compositional senses. Embossed and emotive features were seen as the semiotic features that contribute to the stance and to the topic highlighting. The coding was taken an iterative form to ensure the reduction of the salience of repetitive ecological frames, and comparative analysis was taken place across platforms and languages.

Ethical standards for digital research were ensured by analyzing only content that was accessible to all and anonymizing user identities. Analytical rigour was maintained through the use of adequate triangulation of coders, peer review, and detailed documentation of coding decisions. Although limited by the availability of English and Urdu posts and the qualitative interpretation, the methodology provides a focused and reliable framework for examining the ecolinguistic framing in Pakistan's

social media discourse.

4. Results and Discussion

This section is aimed at showing and discussing the findings of the qualitative ecolinguistic analysis of 200 social media posts (100 on Twitter and 100 on Instagram) by Pakistani users in January 2024-June 2025. The current analysis of the framing of nature and biodiversity in terms of recurring linguistic and multimodal patterns, and how the discourses reveal underlying ecological ideologies. The results are organised in a thematic framework and discussed in terms of theoretical frameworks from Kloce (Stibbe, 2021) and framing theory (Lakoff, 2010).

4.1 Overview of Findings

The analysis described digital communication about the environment in Pakistan as linguistically and visually rich, but ideologically complicated. While social media users demonstrate ecological concern and emotional attachment to nature, the discourse they employ is prone to shifting between ecocentric and anthropocentric frames. In ecocentric frames, nature is viewed as a living entity that deserves respect, whereas in anthropocentric frames, nature's existence is defined primarily by its connection to human benefit or morality.

Four frames that dominated the data were as follows:

1. Nature as Victim

2. Nature as Home

3. Humans as Guardians

4. Nature as Economic Resource

These frames collectively justify the way Pakistani digital users conceptualize the environment in terms of their emotional and pragmatic frames. The variety of resources in cross-platform linguistic strategies is further evidence of how separate digital spaces provide for separate ecological narratives.

4.2 Linguistic Framing of Nature and Biodiversity

4.2.1 Nature as Victim

The frame of Nature as Victim was most commonly recognized, especially on Twitter, where discourse often reacted to environmental crises, such as floods, heatwaves, and deforestation. Posts used personification, metaphors, and emotive adjectives to characterise the environment as a suffering being. Examples were the phrases like

"The Earth is bleeding," "The trees are crying," and "Pakistan's lungs are burning."

This linguistic construction of nature as a living victim is consistent with what Stibbe (2021) refers to as an "empathic ecological narrative" (i.e., fostering compassion, yet also implying human dominance through a portrayal of nature as powerless). Such framings draw on Lakoff's (2010) cognitive framing model, in which metaphors like "Nature is a patient" trigger moral urgency and guilt that may spur activism in the short term.

A number of Urdu tweets included parallel metaphors in the idiom-matic language, e.g. "زمین رو رہی ہے مگر ہم خاموش ہیں" ("The earth weeps but we are silent"). This linguistic choice links the register of religion with the register of poetry, making the environmental crisis a matter of both faith and ethics. While such emotive discourse serves well in highlighting ecological degradation, it tends to flatten out specific structural causes, which in turn transform environmental collapse into a sentimental story rather than a political one.

4.2.2 Nature as Home

One such frame, the *Nature as Home*, was highly prevalent in Instagram, as users used imagery and poetic words quite extensively to convey belongingness and a feeling of being in tune with the natural world. Postings included enchanting landscapes - mountains, forests, rivers - and such captions as "This is where peace lives", "*My soul breathes here*" or "Home is where the mountains meet the sky".

Linguistically, this frame was based on evaluative and affective language, frequently supported by positive adjective descriptions (e.g., "pure," "eternal," "sacred") and metaphors of kinship (e.g., "Mother Earth," "our home," "our shared garden"). Such expressions relate to what Fill and Penz (2018) refer to as life-affirming discourse, which portrays nature as a partner rather than an object.

Interestingly, several Instagram posts featured bilingual captions - English and Urdu - to convey intimacy and authenticity. For example, one of the captions said, "میری شناخت قدرت سے جڑی ہے" ("My identity is tied to nature"). This language fusion can be called the first language ecology resonance, as the local languages have a positive effect on the enhancement of the emotional bond and cultural validity (Rafi, 2024).

In such framing, Instagram users demonstrated a more familiar but personal, aesthetic,

and spiritual connexion to nature, refuting any crisis-related discourse generated on Twitter. The meaning was reinforced through the visual mode that included dense plants and greenery, low-key lighting, and close-up shots that helped me feel comfortable and belong to the image, which is what Kress and van Leeuwen (2020) referred to as visual salience in multimodal meaning-making.

4.2.3 Humans as Guardians

Humans as Guardians became the frame of both platforms and was particularly prominent in NGO and environmental campaign posts. On linguistic terms it formed agency and moral obligation using imperatives, modality and collective pronouns:

"We have to act before it is too late."

"Protect what protects you."

"Collectively, we can save our planet."

These sentences exemplify deontic modality (necessity, obligation) and inclusive pronouns, which together create a discourse of shared responsibility. This is consistent with the concept of 'constructive ecological narratives' which provide the impetus for action by appealing to ethics as formulated by Alexander (2014).

The content developed posts based on this frame included, on many occasions, a series of hashtags such as #ActForEarth or #ClimateActionNow, which functioned as a system of textual imperatives disseminated through networked discourse (Lopez-Rabadan, 2022). The use of collective language is correlated with a sense of civic environmentalism, where moral legitimacy is based on collective participation rather than institutional authority.

This framing is also ecologically progressive because it recognises human agency, but does not reduce nature to a passive object. This recalls the broader ecological ambitions to foster 'stories to live by', through which environmental well-being is promoted (Stibbe, 2021).

4.2.4 Nature as Economic Resource

A smaller, but significant subset of posts framed the environmental discussion as an economic or utilitarian asset, especially in corporate discussions and tourism-related discussions. Expressions such as "Green business is good business", "Invest in eco-tourism," or "Pakistan's nature - our competitive advantage" reflected an instrumental perspective.

Such posts mainly used business-esque language - "investment," "resource," "opportunity" - and positive evaluative adjectives - "sustainable," "profitable," "strategic." This framing is consistent with neoliberal discourses of green capitalism, particularly those emphasizing environmental conservation as compatible with economic growth.

Although these accounts may positively encourage corporations to be environmentally friendly, there is a possibility that the accounts will culminate in commercialising the environment and reduce the worth of ecology to the economic favors. Stibbe (2021) regards such a discussion as a type of greenwashing, when environmental concern is applied as a figure of speech to promote commercial interests. With respect to the developing economy of Pakistan, though, one may also have it, that such a frame may portray pragmatic adaptation - an acknowledgement that the environmental lobbying has to be firmly in agreement with social-economic reality, to have institutional involvement.

4.3 Multimodal Construction of Ecological Meaning

The multimodal construction of ecological meaning focuses on the use of multiple semantic codes crafted to depict the actual reality in a community through the use of multimedia and multicultural analytical techniques. Through multimodal analysis of both websites, the researchers found out that meaning was constructed together by use of visual and written elements.

As a participant on Twitter, the number of followers employed the verbal techniques: text (dense, textual message), emotion (emotionally loaded adjectives), and hashtag to create the maximum number of hits (#ClimateChange, #SaveNaturePakistan). The images were secondary, however, they were more likely to support the reality of the message, e.g., images of deforestation, floods, or dirty river. These pictures supported the concept of Nature as Victim frame, because these pictures make use of imagery of crises and urgency to sensationalise them.

While on Instagram, the visual mode was prevailing however. Soft light, abundant use of greens and blues, and composition symmetry were used to produce aesthetic harmony and bring out feelings related to nature among the users. Caption forms were most often short and poem-like and had an affective quality that would have fit in with the frame of the Nature as Home. Emojis like: , and :) Regarding

verb content, the symbols = sign for tone, = sign for empathy, and Tik: Sign for optimism, etc. Emojis effectively convey visual encoding of tone, empathy, and optimism.

The hashtag was used by both platforms as a semiotic anchor, that is, the posts of individuals have become the elements of a bigger story. According to Lopez-Rabadan (2022), the usage of hashtags is not deployed as a categorisation tool but as participatory frame-structures would help frame collective explanation as a form of structure. As an example, the hash tag BiodiversityPakistan was used, which managed to tie together fragmented personal posts to form a coherent discussion on the ecology in the Pakistani nation.

The multimodal grammar developed by Kress and van Leeuwen (2020) provides an appropriate structure in this case because the messages in the Instagram posts had a great degree of interactive meaning (an outright request to emotions with the help of gazes and closeness). Conversely, the posts through Twitter that were concentrated on representational (unemotional) meaning (connoting ecological events and statistics) were accomplished by means of delivery. The interaction of the text/image/symbol resulted in the formation of layer ecological meanings, which were subliminal and never could be expressed within one mode.

4.4 Cross-Platform Comparison

The comparative analysis of Instagram and Twitter shows the presence of dissimilar cultures of ecology of communication that are designed in reaction to the possibilities which are offered to the audience.

As a text based and dialogical site, Twitter was a place of controversy, criticism and activism. The emphasis on urgency and problem identification was characteristic of the posts, and Tornberg (2025) refers to such a focus as the aesthetic of crisis communication. Users defended themselves and demanded accountability, mostly tagging political leaders or organisations. English was the main language used, which was the result of the educated and urban population of Twitter in Pakistan.

In comparison, Instagram enabled emotional involvement and positive influence with the use of imagery. Posts were framed as nature, either restorative, sacred, or beautiful, with frequent use of urge and bilingual captions to create an intimate feeling. Engagement was achieved through likes, comments, and story

reposts, rather than verbal debate. Instagram was thus a platform for aesthetic appreciation and emotional connection, and a complement to Twitter activism.

Diverging from one another, the two platforms exhibit different ecological functions: Twitter mobilises, while Instagram humanises. This duality reveals the coexistence of rational and emotional ecolinguistic strategies in Pakistan's digital ecology - a balance that can positively impact the ecology through persuasion if combined effectively.

4.5 Discussion in Relation to Existing Literature

The present study confirms and extends former research in the areas of ecolinguistics and framing. The "Nature as Victim and Humans as Guardians" frame has parallels with the global environmental narratives identified by Stibbe (2021) and Fill and Penz (2018). The prevalence of bilingual poetic talk on Instagram, however, suggests a particularly South Asian ecological expressiveness that has yet to be documented in Western ecolinguistic literature.

The use of cultural idioms, as well as Urdu metaphors, supports the idea presented in Rafi's (2024) argument that local languages are not just tools of communication but also reservoirs of ecological worldviews. Likewise, spiritual undertones like these have been observed in some captions (e.g., "Nature speaks in prayers"), echoing indigenous philosophies of ecology that view nature as holy, not merely useful.

A further layer of complexity is added by the economic frame which, despite its limitations, has created opportunities for a kind of alternate access: while in the western literature, the ecolinguistic study of the environment and society usually critiques the market oriented environmental discourse as ecologically "destructive" (Stibbe, 2021), in the Pakistani frame, the economic frame can function as a gateway frame for critical consciousness about environmental issues among corporate and middle class who are usually not environment conscious.

Moreover, the multimodal nature of the discourse studied supports the proposition made by Kress and van Leeuwen (2020) that meaning emerges due to inter-semiotic complementarity. The observed textual-voting synergy extends beyond language itself in the ecologically based analysis, making us aware that in the digital era, ecology signifies the need for the orchestration of multimodal signs.

The findings also add to Lakoff's (2010) cognitive framing theory: messages presented in language that evoked moral and affect emotions (e.g., "Protect what protects you") led to higher engagement and resonance than those presented in neutral language only (e.g., "Pakistan loses X hectares of forest per year. This implies that the key to successful ecolinguistic communication in social media (at least) is emotionally charged, value-based framing, not the saturation of information.

Finally, this study makes contributions on the regional level, showing that Pakistan's digital environmental discourse aligns with global trends in multimodal ecolinguistics, albeit with some regional peculiarities. Local metaphors, bilingual expressions, and spiritual imagery draw on the linguistic and religious practices of Pakistan's diverse ethnic and religious groups, and thus are part of the argument for ecological pluralism, which acknowledges the many different cultural ways of telling the stories of humans and their relationship to nature (see Alexander 2014).

5. Conclusion

This study analysed how nature and biodiversity are linguistically and multimodally portrayed in the discourse of social media in the Pakistani context, namely, postings in Twitter and Instagram. Basing the research on the power of the ecolinguistics and theoretical frameworks of framing, the research examined the interrelations between language and imagery and digital affordances to uncover the ecological meaning and create social networks about the environment. The discussion of 200 posts indicated that Pakistani users use various discursive frames to immerse themselves in environmental topics to depict both the story of the global sustainability and the parochial cultural, ethical and linguistic worlds.

The findings indicate that the digital ecological communication in Pakistan is dominated by four frames to which Nature as Victim, Nature as Home, Humans as Guardians, and Nature as Economic Resource belong. The idea of Nature as Victim that was popular in Twitter helped in shaping empathy and a moral urgency by use of pain, loss and suffering metaphors. The Nature as Home frame that appears frequently in Instagram suggests a feeling of emotional belonging and spirituality to nature and is usually accompanied by the poetic and bi-responsible posts. The frame, Humans as Guardians focused more on collective moral responsibility by being placed in the foreground and Economic Resource by pragmatic discourses e.g. the relationship

between sustainability and economic growth.

These framings highlight the fact that social media within the Pakistani setting is an environment where there is dynamic meaning-making. Twitter is, practically, a platform of action, criticism and mobilisation, the language therein is an assertive, fast one; Instagram, is an emotional, aesthetic, identity-based one. The multimedia approach to the text, visual, and symbolic makes it possible to validate the notion that the ecological meaning of digital communication is inseparably multimodal, as the authors Kress and van Leeuwen (2020) claim that the meaning is not created by the use of language, but in the processes occurring between two or more systems of semiotics.

Theoretically, the current research boosts the ecolinguistics discipline due to its ability to relate it to the South Asian digital environment and integrate the multimodal analysis of discourse with the linguistic theory of framing. It proves that making meaning in ecolinguistics in social media does not pertain to verbal texts only, and thus pertains to the visual and affective levels mediated culturally. These similarities and differences of the environmental storytelling with the Western one are manifested through the frequent use of the Urdu language, the Islamic allusions to moral matters, and the local metaphors that emphasise the need to use culturally connected communication to provide ecological understanding.

In practise, the paper suggests that efficient environmental communication in Pakistan should incorporate the means of local linguistic resource, symbolism culture to resonate with listeners. Such insights can act as the foundation of upcoming policies by policy makers, nongovernmental organizations, and educators, to formulate campaigns that can make the appreciation of the global ecological concepts connect with relatable cultural stories. Moreover, concerned with the affordances of social media platforms apply to the situations when the environmental communicators may understand their communicative needs and employ Twitter to produce critical mobilisation and Instagram to produce emotional and visual narratives.

Although English and Urdu data were used in this study, the ecolinguistic discourse could be studied in the local languages (Punjabi, Sindhi, Pashto and Balochi) which might possess certain ecological metaphors and worldviews. Longitudinal research can also be involved in the change in the framing of linguistically based

descriptions of the environment with regard to particular environmental events or policies.

Finally, the research concludes that language continues to play the utmost role in the way the two societies interpret and solve difficulties in the environment. The identification of this linguistic and graphic frame(s) demonstrates that, unlike passive receivers of global sustainability rhetoric, the Pakistani users are active agents of the production of new ecological imaginaries. Their online conversation is emphatic, spiritual and manifesto-like civic engagement in a special kind of ecological awareness based on cultural and language plurality. This research is among the broader ecolinguistic purposes of unfolding and nurturing those stories that will enable humanity to coexist more in harmony with nature.

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