

Ecolinguistic characteristics of virtual communication based on social media platforms

Nataliia Khaidari^{1*,†}, Jamil Al-Azzeh^{2†}, Olena Kovtun^{1†}, Nataliia Melnyk^{1†} and Alla Bohush^{3,†}

¹Scientific Cyber Security Association of Ukraine, Mykhaila Dontsia Str., 2A, Kyiv, 03161, Ukraine

²Al Balqa Applied University, Al-Salt, 19117, Jordan

³South Ukrainian National Pedagogical University named after K. D. Ushynsky, Staroportofrankovska Str., 26, Odesa, 65020, Ukraine

Abstract

The paper explores the rapid evolution of virtual communication and the emergence of new linguistic realities influenced by technological advancements in the late 20th and early 21st centuries. It highlights how the Internet, as a borderless and hypertextual space, fosters a new type of discourse – virtual discourse – that reshapes human interaction and communication norms. Central to this development is ecolinguistics, a field that examines the interconnection between language, society, and both the natural and digital environments. The article outlines three key traditions in ecolinguistics: the Haugenian (language as part of a broader social and natural ecology), the biolinguistic (focus on language diversity and preservation), and the Hallidayan (language's role in ecological and social crises). These traditions emphasize that language use reflects and influences environmental and social realities. The article describes virtual genre studies, investigating the unique communicative formats born from online environments. Social media platforms such as Twitter (X), Facebook, Instagram, and TikTok are viewed as linguistic ecosystems with distinct genre features, communicative goals, and platform-imposed linguistic constraints. These platforms blur the traditional roles of message producers and consumers, promote multimodal and interactive discourse, and often enable toxic linguistic practices due to algorithm-driven visibility and genre-specific limitations. The article underscores the need to analyze and structure these evolving genres and to ensure ecolinguistic principles guide digital communication to foster ethical and inclusive discourse. Ultimately, virtual communication is seen as a reflection of modern linguistic dynamics and a powerful force shaping social behavior, identity, and global interaction.

Keywords

ecological linguistics, virtual communication, virtual discourse, social media platforms

1. Introduction

The development of information technology in the late XX – early XXI century stimulated the emergence of fundamentally new ways of storing, searching, and presenting information, encouraged the development of a new cultural and linguistic environment, a new “linguistic reality”, which is rapidly developing and evolving under the influence of the expansion of modern means of communication: cellular and satellite communications and the Internet. Currently, the virtual environment is one of the characteristics of contemporary communication. The Internet today is a synthesis of ideas, hyper-text, multimedia, the universality of the information network, network societies, and nonlinearity of thinking implemented in the network. The Internet is a world that knows no state borders, in which the speed of information transfer is not determined by the geographical distance of objects from each other; it is a way to obtain any data quickly, the ability to communicate with millions of people in different parts of the world. The modern world can now be called a civilization of hypertext, a modern

CH&CMiGIN'25: Fourth International Conference on Cyber Hygiene & Conflict Management in Global Information Networks, June 20–22, 2025, Kyiv, Ukraine

*Corresponding author.

†These authors contributed equally.

✉ nataliia.khaidari@npp.nau.edu.ua (N. Khaidari); jamil.azzeh@bau.edu.jo (J. Al-Azzeh); olena.kovtun@npp.nau.edu.ua (O. Kovtun); nataliia.melnyk@npp.nau.edu.ua (N. Melnyk); allabogush777@gmail.com (A. Bohush)

ORCID 0000-0001-7283-0159 (N. Khaidari); 0000-0002-3525-5471 (J. Al-Azzeh); 0000-0001-5216-6350 (O. Kovtun); 0000-0002-6641-0649 (N. Melnyk); 0000-0002-5678-5455 (A. Bohush)



© 2025 Copyright for this paper by its authors. Use permitted under Creative Commons License Attribution 4.0 International (CC BY 4.0).

person can be called a virtual, network person, and contemporary society can be called an information one. In connection with such rapid rooting and the special significance of Internet technologies in human life, the separation and study of virtual discourse, which operates in a special electronic virtual communicative environment have become relevant in recent decades [1, 2, 3, 4].

Linguistic and cultural norms exist in the form of expectations, the observance of which is required by society. These norms are dynamic and can change following the influence of linguistic theories and paradigms that become relevant at a certain stage of the development of society. Since the second half of the twentieth century, language ecology or ecological linguistics as “the study of interactions between any given language and its environment” has become relevant [5, 6]. The main task of modern ecolinguistic research is to study the interaction between language, a human as a linguistic personality, and the environment. Language is considered not only in the system of determination “language – culture”, and “language – subject”, but also in the system “language – nature”, and “language – ecosystems”, because the environment, the situational context of speech affect the structure, content, and language development no less than the culture and personality that are themselves a part of these natural and social ecosystems.

According to research, modern people spend an average of up to 70% of their time on the Internet, which contains various social media platforms. Searching for information about goods or services, their parameters, quality, or cost; the desire to get a job, establish partnerships, or join joint social programs encourages network users to turn to various social media platforms. K. Taranenko [7] notes that given the pace of development of modern media and the opportunities that open up for free expression of opinions, where the user becomes both a creator and a consumer of information, special attention should be paid to the content of messages available on modern media resources. The topic of communication in social networks is relevant because it is here that the most acute statements of a xenophobic, sexist, and racist nature are used. Therefore, the content of such platforms requires compliance with the norms of ecolinguistics in order not to violate the ethical principles and personal boundaries of all registered users.

Ecolinguistics, rooted in the metaphor of language as an ecosystem, explores the relationship between language, society, and the environment – both physical and digital. With the rapid growth of online interaction, particularly via social media, virtual communication has become a dominant form of discourse. The study aims to analyze the ecolinguistic characteristics of such communication by examining how language adapts to the dynamic, fast-paced, and multimodal environment of platforms like Facebook, Twitter (X), Instagram, and TikTok [8, 9, 10, 11, 12].

This study employs a comparative analysis of four prominent social media platforms – Twitter/X, Instagram, TikTok, and Facebook – as digital linguistic ecosystems. It integrates the ecolinguistic approach, focusing on how environmental constraints (e.g., character limits, multimedia formats), user expectations and emotional dynamics influence language use. Representative user-generated texts (posts, captions, comments) were analyzed in terms of linguistic features, communicative strategies, and ecological adaptation. Supplementary tables summarize structural and functional distinctions across platforms to highlight genre-specific trends.

2. Results and discussion

2.1. Language ecology: a brief overview

The close coexistence of numerous branches of knowledge, terminology, and methodology of different sciences allows us to move forward faster, make fundamental discoveries, and reach promising conclusions. The rise in popularity of ecology as a scientific field in the second half of the XXth century aroused keen interest of representatives of various scientific schools, including linguists. The result of such keen interest is the fact that language ecology is currently one of the new and fast developing areas of linguistics.

As stated in T. LeVasseur’s article “Defining “Ecolinguistics?”: Challenging emic issues in an evolving environmental discipline” [13], there are three interrelated yet distinctive theoretical platforms in

language ecology: the “Haugenian tradition”, the “biolinguistic tradition”, and the “Hallidayan tradition”.

The “Haugenian tradition” backs to the work of E. Haugen “The Ecology of Language” [5], which sees language as part of a larger ecology based on the mutual interactions among the human mind, society, and natural environment. In one of the elaborations supporting the above-mentioned tradition [14], authors argue for a conceptualization of four types of “ecologies” that language is situated in, since “it is not at all obvious what a language’s environment might be” [14]. First, if one understands the environment of a language as other languages, one identifies a symbolic ecology, a dimension of ecosystemic interactions between symbolic entities. This approach investigates the co-existence of languages or ‘symbol systems’ within a given area. Second, language, viewed primarily as a cognitive capacity (language as “competence”) or as a medium for social communication (language as “performance”), makes grounds for a natural ecology that comprises the biological and physical surroundings in which it is spoken. This approach investigates how language relates to the biological and ecosystemic surroundings (topography, climate, fauna, flora, etc.). Third, in case one focuses on human (linguistic) interaction that both constitutes and is constituted by larger social and societal structures that include institutions, economic processes, and sociocultural resources, one states that language exists in a sociocultural ecology. This approach investigates how language relates to the social and cultural forces that shape the conditions of speakers and speech communities. Fourth, language exists in a cognitive ecology that is structured by the interactions between biological organisms. This approach investigates how language is enabled by the dynamics between biological organisms and their environment, focusing on those cognitive capacities that give rise to organisms’ flexible, adaptive behaviour [14, 15, 16].

The “biolinguistic tradition” follows a more pragmatic interpretation of the term “language ecology”, viewing the existing multilingual system across the world as an ecological system where the extinction of minority languages is considered as the loss of biodiversity in the world. This tradition was supported by D. Nettle and S. Romain, who coined the term “biolinguistic diversity” and argued for the necessity of preserving minority languages in the increasingly hegemonic world brought by globalization, with English functioning as the primary lingua franca for intercultural communications [17]. In this tradition, topics like language diversity, language endangerment, language survival, language death, and language revitalization are frequently used. Applying such bio-ecological terms, the field refers itself to an ecological approach.

The “Hallidayan tradition” can be traced back to M. Halliday’s work “New Ways of Meaning: the Challenge to Applied Linguistics” [18], where the connections between language use and environmental degradation are emphasized. M. Halliday takes a functional approach toward language research, stressing, “classism, growthism, destruction of species, pollution and the like [. . .] are not just problems for the biologists and physicists. They are problems for the applied linguistic community as well” [18]. The scientist concludes that the anthropocentric nature of human language makes it at least partially responsible for human being’s unecological conduct. Researches, conducted in the “Hallidayan tradition”, develop primarily in two directions. The first one is associated with research of eco-critical ecolinguists who tend to place their investigations in the intersection between ecolinguistics and critical discourse studies and focus on analyzing texts about ecological problems. A. Stibbe, for instance, sees the function of ecolinguistics in offering valuable theoretical and methodological contributions to creating ecological awareness. For him, the contemporary media landscape dominates by discourses promoting consumerism and material growth; thus, presenting a central subject for ecological critiques [19]. The second direction of research focuses on the suggestion that unecological ideas and ideologies are embedded in, not only texts on environmental issues but also in the grammar of language, in other words, it seeks to reveal unecological elements in the language system. M. Halliday discusses the point that English grammar makes a categorial distinction between two kinds of entity: those that occur in units, and are countable in the grammar, and those that occur in the mass and are uncountable. “Our grammar [. . .] construes air and water and soil, and also coal and iron and oil, as ‘unbounded’. That is, as existing without limit. [. . .] We know that such resources are finite. But the grammar presents them as if the only source of restriction was the way we ourselves quantify them: a barrel of oil, a seam of coal, a reservoir of water and so on – as if they in themselves were inexhaustible” [18]. According to M. Halliday, grammar is “a theory of experience; a theory that is born of action, and therefore serves as a

guide to action, as a metalanguage by which we live" [18]. It is for this very reason that ecolinguists can analyze and criticize the language of written texts about the environment and search for ecological and unecological elements in the grammar of languages.

In today's globalized world, the problem of conceptualization of ideas, verbalization of concepts, and later their adequate perception and interpretation by communication participants acquires a new meaning, as coexistence, daily communication, and cooperation of different cultures, which are also speakers of different languages, requires not only study and interpretation of the sphere of concepts of a certain professional language environment, but also the unification of leading concepts that prevail in a certain institutional context. Thus, one of the important tasks of ecolinguistics is the development of professional and terminological vocabulary in various fields of science, economics, and culture, which would reflect the realities of the day, the peculiarities of communication in the intensive development of high-tech information society, which would allow one to avoid the situation, when the same terms or professional lexical units, however, each participant of communication attaches to this concept its distinctive meaning. Current issues of modern linguistic theory and language practice solve the issues of language ecology and are fundamental principles of language use in various spheres of communication [20].

Thus, ecolinguistic communication is a practice of improving communicative activity in the process of moral and spiritual formation of personality; it is an interdisciplinary science that is designed to solve a variety of practical and theoretical tasks relevant to modern theory and practice of language use, related to the problems of language ecology violations in various areas of international and intercultural communication.

2.2. Genre characteristics of virtual communication

Network genres, which owe their appearance solely to the technical capabilities of the Internet, are a very productive concept in the study of communication processes on the World Wide Web due to their complexity, which corresponds to the complexity of the new communicative Internet space. This concept combines extralinguistic and linguistic factors of communication, while it helps to identify features that are inherent in all the variety of texts that function on the Internet.

We suggest to explore speech genres in the light of modern linguistic theories, to identify specific features of the genres of network discourse and virtual genre studies, to analyze Social Media Platforms as one of the genres of virtual communication.

The difficulty of defining the speech genre in modern scientific circles lies primarily in the multilayered and dynamic communicative environment in which it operates. T. Yakhontova [21] in her scientific work "Linguistic Genology of Scientific Communication" considers genres in three dimensions: 1) socio-communicative (as standardized forms of social acts); 2) socio-cognitive (as frames of linguistic and social behavior and communication); 3) linguistic (within the dichotomy "content-form").

However, with the advent of communication on the Internet, the issue of virtual genre creation has become relevant: there are purely network genres, i.e. genres that are specific only to Internet communication. An urgent issue is the study of genres that function within the Internet discourse, as the virtual network becomes a dynamic organism of social communication, a key source of information. Modern linguistics is faced with the need to structure the speech genres of the Internet, as well as to develop their cognitive models.

A thorough study of the theory of speech genres on the web can be traced in the work of D. Crystal "Language and the Internet" [3], in which the author identifies five ways of Internet communication: e-mail, synchronous and asynchronous chats, web sites and virtual worlds. K. Crowston [22] in the work "Internet Genres" emphasizes that the network has led to the "democratization" of genre formations, which provides an extensive system of their types, but at the same time, the researcher considers genre a unifying factor that is a common point of contact of different user groups or web units. In his opinion, creating a statistical typology of genres of the Internet is not possible because of their conceptual dynamics: long-term formation, and rapid emergence [22].

O. Horoshko [23] believes that the problem of genres that function and develop in the socio-communicative space of the Internet is quite complex because the virtual space boundaries between genres are much more blurred and more mobile than in real communication. The author explains this phenomenon by the permanence of the process of formation of genres in it, as well as features that distinguish Internet communication from real communication, such as the constant and rapid development of Internet technologies, which causes countless transformations in the communicative space of the Internet, and as a consequence, Internet genres emerge, form, change, and sometimes disappear much faster than in real face-to-face communication (FTF).

Thus, virtual genre study is one of the newest and most relevant areas in the theory of language genres. Linguists agree that the task of virtual genre studies is to describe and structure the whole variety of virtual genres and ways to classify them. The processes of transformation of speech genres, which previously took a long time, received a significant impetus in Internet communication, and “speech genres have acquired new cognitive-communicative forms” [2]. This once again confirms the fact that the development of speech genres in the network is continuous, and the Internet has become a completely new communicative environment with its specific linguistic features that deserve close study, and time-space should be one of the key analysis tools.

2.3. Social media as a genre of virtual communication

Social media represent a distinct and dynamic genre of virtual communication characterized by unique communicative practices, social functions, and interactional features. Unlike traditional mass media, social media blur the boundaries between producers and audiences, as ordinary users simultaneously create, modify, and share content, making the genre highly participatory and fluid [24, 25, 26, 27].

Social Media as a Genre of Virtual Communication possesses several key characteristics. Dynamism and coherence indicate that social media are not fixed; they are continuously shaped and reshaped through users’ communicative practices, expectations, and social interactions. This constant negotiation renders social media genres inherently unstable and adaptable to evolving social needs and technological affordances.

Multimodality and interactivity involve the integration of written, visual, auditory, and multimodal elements of communication, allowing for the creation of rich, multimodal discourse. The interactive features of platforms (likes, comments, shares) enable immediate feedback and foster social interaction.

Social purpose and unity promote interpersonal communication and a sense of community and belonging; they are embedded in everyday life and social structures, reflecting users’ identities, cultural norms, and social imaginaries.

Genre-oriented stability provides users with conventions and expectations that help them understand communication and guide their interactions. This “fixity” amid chaos is essential for enabling users to navigate the complex digital environment.

Main items of platform linguistic toxicity are the following ones: algorithmic emotionality – the more emotional/angry the statement, the higher its reach; popularity mechanics – likes, comments, reposts encourage hyperbole, clichés, provocations; built-in genre formats – platforms dictate the style and form of speech (short tweets, “aesthetic” captions, reactionary videos), which limits reflection and complicates deep thinking; normalization of toxic practices – certain phrases/behaviours are repeated as memes and become the norm.

3. Social media platforms as a linguistic ecosystem

Within the digital space, social media functions as linguistic ecosystems – environments in which language adapts to the technical constraints, cultural expectations, and communicative goals of its users. Each platform has its own linguistic rules, genre norms, and interaction models that shape a unique discursive space.

Twitter (now X) is an example of an ecosystem that encourages brevity, urgency, and high information density. Initially limited to 140 characters, and later to 280 characters, it has created an elliptical,

abbreviated speech structure that often uses slang, acronyms, hashtags, emojis, and even images or GIFs to supplement the content. Specific Features are:

- The language here is usually directive, emotionally charged, and ironic;
- Sarcasm or intertextuality (quotes from pop culture, or politics) is often used;
- Threads (series of tweets) are popular, allowing the creation of chained narratives despite length restrictions.

This platform is ecologically adapted to rapid content consumption and high frequency of interactions (likes, retweets, replies) [9].

Instagram forms a visually oriented environment where text is a complement to images or videos. The main ways to publish information are captions, stories, and comments. Speech on Instagram is often:

- Emotional, expressive, personalized
- Rich in emojis that act as semantic and aesthetic elements;
- Includes hashtags as a means of categorization, self-expression, or joining a trend (#aesthetic, #selflove);
- Extensively uses code-switching (for example, mixing English and native language).

Instagram encourages representative discourse - language focused on self-presentation, branding, and emotional interaction with followers [10].

TikTok creates an audiovisual linguistic environment where language functions mainly in oral form (voiceovers, direct speech) and is accompanied by visual effects. At the same time, video captions, subtitles, sound, and on-screen text play an important role. Specific Features are:

- The discourse is built around memes, trends, and challenges that create cyclical and repetitive speech patterns;
- The hybridity of language codes, graphic elements, and sound sequences is characteristic;
- The text often has an ironic or parodic function, commenting on the video or creating contrast.

TikTok develops a new type of multimodal communication, where speech is closely integrated with non-verbal elements [11].

Facebook retains the features of a more traditional text-centric discourse. The platform allows for the creation of long posts that can include:

- Personal stories, autobiographical notes;
- Analytical texts, political commentary;
- Group communication in communities (comments, threads, polls).

The language here can be diverse, changing depending on the audience and topic. Facebook also retains the function of a discussion space, which promotes the development of argumentative discourse, dialogues, conflicts, and support [8].

To contextualize the empirical findings, it is essential to outline the communicative environments of the platforms under study. Table 1 provides a comparative overview of the general characteristics of Twitter/X, Instagram, TikTok, and Facebook as language environments, highlighting variations in message length, content modality, and communicative goals.

From an ecolinguistic perspective, the platforms differ markedly in their typical linguistic tools and strategies of eco-adaptation, as summarized in Table 2; for instance, while Twitter/X emphasizes conciseness through hashtags and abbreviations, Instagram fosters a visually integrated and emotionally positive discourse.

Table 1
General Characteristics of Social Media as Language Environments

Platform	Main type of content	Message length	Communication style	Targeted action/effect
Twitter/X	Text (short), media	Up to 280 characters	Laconic, ironic	Reaction, distribution
Instagram	Image + caption	Medium	Emotional, self-presentational	Identification, aesthetics
TikTok	Video + audio captions	Short/oral	Multimodal, informal	Entertainment, participation in a trend
Facebook	Text + media	Long or short	Variable, debating	Informing, discussion

Table 2
Language Specifics (Ecolinguistic Aspect)

Platform	Typical language tools	Specific Features of eco-adaptation	Use of emotional strategies
Twitter/X	Hashtags, abbreviations, emojis	Conciseness, templated style, repetition	High (sarcasm, evaluative language)
Instagram	Emojis, Anglicisms, code-switching	Visual-textual synthesis	High (light messages, positivity)
TikTok	Slang, neologisms, on-screen text	Orality, visuality, sound + text	Medium/High (gestures, facial expressions)
Facebook	Full sentences, essay-like posts, links	Contextual adaptation to the audience	Medium (emotional engagement)

Table 3
Language Specifics (Ecolinguistic Aspect)

Platform	Main genres	Trends / Language Cliches
Twitter/X	Tweet, thread, reply, flashmob	"Hot take", "Cancel him", "So true"
Instagram	Captioned post, story, reel, IGTV	"Life update", "POV", "Outfit inspo"
TikTok	Challenge, sketch, reaction, tutorial	"That one friend", "Wait for it..."
Facebook	Personal post, group post, event, poll	"Long read", "My thoughts on...", "Just saying"

Further insight into genre conventions and recurring language clichés is offered in Table 3, where platform-specific discourse patterns, such as TikTok's reliance on trend-based sketches and Instagram's use of captioned posts, reflect distinct stylistic and communicative norms.

Finally, Table 4 underscores sociolinguistic and pragmatic dimensions, indicating, for example, that while TikTok and Instagram engage predominantly younger users through participatory and self-expressive strategies, Facebook targets a more adult demographic with functions oriented toward information sharing and discussion.

3.1. Empirical insights into platform-specific linguistic ecosystems

To support the theoretical findings with empirical data, a small-scale comparative corpus analysis was conducted. Short texts were collected from four major social media platforms – Twitter (X), Instagram, TikTok, and Facebook – between April and May 2025. A total of 200 texts (50 per platform) were sampled, including tweets, Instagram captions, TikTok video captions/subtitles, and Facebook status updates or post excerpts. The sampling aimed to reflect typical user-generated content and excluded promotional or institutional posts.

Each text was analyzed for:

Table 4
Sociolinguistic and Pragmatic Aspects

Platform	Target audience (mainly)	Interaction strategy	Pragmatic function
Twitter/X	Youth, journalists, activists	Retweets, mentions, tags	Spreading ideas, protest
Instagram	Youth, brands, bloggers	Likes, comments, stories	Influence, self-presentation
TikTok	Teenagers, youth, content creators	Reposts, duets, sound remixes	Participation, entertainment
Facebook	Adult audience, families	Groups, events, threads	Informing, discussion

Table 5
Lexical and Symbolic Markers

Platform	Avg. Emojis per Post	Use of Slang (%)	Use of Hashtags (%)	Code-switching (%)
Twitter/X	1.3	64%	88%	12%
Instagram	3.7	45%	92%	54%
TikTok	2.1 (in captions)	72%	40%	31%
Facebook	0.6	18%	25%	9%

- Lexical markers: emojis, abbreviations, slang;
- Structural features: sentence length, syntax, punctuation;
- Emotional strategies: evaluative adjectives, emotive intensifiers, sarcasm markers;
- Discursive style: use of personal pronouns, speech acts (e.g., questioning, exclaiming, narrating).

A lexical and stylistic analysis reveals significant differences across social media platforms, depending on their functions and target audiences. As shown in Table 5, Instagram and TikTok make extensive use of emojis as tools for emotional expression, whereas Twitter/X relies heavily on hashtags and slang. Notably, Instagram has the highest average number of emojis per post (3.7), while Facebook demonstrates the lowest frequency of emojis (0.6), slang (18%), and hashtags (25%). This reflects Facebook's tendency toward more formal and standardized language structures.

Table 6 highlights emotional and evaluative lexis, which are key indicators in ecolinguistic analysis of digital discourse. Instagram once again stands out with the highest proportion of positive emotional language (74%) and the most frequent use of intensifiers, suggesting a highly aestheticized and positively framed communication style. In contrast, Twitter/X shows a strong tendency toward irony and sarcasm (51%), indicating a more critical and often debate-oriented communication mode. Facebook maintains a relatively low level of emotional expressiveness, typically employing a more neutral or narrative tone.

Table 7 presents discursive and structural features. Posts on Instagram and TikTok are shorter, more expressive, and frequently use first-person pronouns and exclamatory sentences, pointing to a self-presentational and emotional communication style. On the other hand, Facebook posts are the longest (averaging 18.9 words per sentence) and least emotionally marked, suggesting a more analytical or storytelling approach to interaction.

Thus, the lexical, emotional, and structural characteristics of virtual communication on social media vary significantly by platform, reflecting different communicative strategies and goals. These distinctions underscore the ecolinguistic specificity of digital discourses.

3.2. Compliance with ecolinguistic norms in social media content

Ecolinguistics emphasizes not only the structural features of language use but also its ethical and communicative impact. In this context, language is viewed as a resource that can either support or undermine

Table 6
Emotional and Evaluative Language

Platform	Positive Emotional Lexis (%)	Sarcasm/Irony (%)	Use of Intensifiers (e.g. "very", "so")
Twitter/X	42%	51%	Medium
Instagram	74%	19%	High
TikTok	58%	37%	Medium/High
Facebook	39%	11%	Low/Medium

Table 7
Discursive and Structural Features

Platform	Avg. Sentence Length (words)	Exclamatory Sentences (%)	First-Person Pronouns (%)
Twitter/X	12.4	48%	44%
Instagram	9.2	55%	69%
TikTok	7.6 (in captions)	41%	61%
Facebook	18.9	26%	38%

Table 8
Results of Ecolinguistic Norm Compliance (Percentage of Total Posts per Platform)

Platform	Posts adhering to ecolinguistic norms (%)	Posts with neutral impact (%)	Posts violating norms (sarcasm, aggression, disrespect) (%)
Twitter/X	46%	28%	26%
Instagram	78%	15%	7%
TikTok	61%	22%	17%
Facebook	69%	20%	11%

the sustainability of the communicative environment. Language use is considered ecolinguistically appropriate when it promotes empathy, respect, inclusion, and non-aggressive expression.

As part of the empirical study (n = 200 texts), an assessment was conducted to determine how well the analyzed posts aligned with the core ecolinguistic principles, including:

- Emotional safety and non-violent communication;
- Empathy, support, and community awareness;
- Absence of hate speech, discrimination, or verbal aggression;
- Conscious, responsible use of linguistic resources.

Thus, as shown in Table 8, Instagram emerged as the most ecolinguistically positive platform, with posts largely focused on supportive, uplifting, or emotionally expressive content (e.g., identity, positivity, self-care). Twitter/X showed the highest percentage of ecolinguistically problematic posts (26%), with frequent use of sarcasm, polarized evaluations, passive aggression, and toxic irony. TikTok displayed a mixed profile: while many videos are entertaining, captions often contain linguistic elements of devaluation, irony, or implicit aggression. Facebook occupied an intermediate position. A significant number of posts aligned with ecolinguistic norms, especially personal stories or supportive comments. However, emotionally charged discourse, especially in political contexts, was also present.

According to Figure 1 under adherence to ecolinguistic norms one understands posts promoting empathy, inclusion, and non-violent communication; neutral impact – posts without significant ethical or ecological influence; violation of norms – posts containing sarcasm, aggression, or disrespectful language.

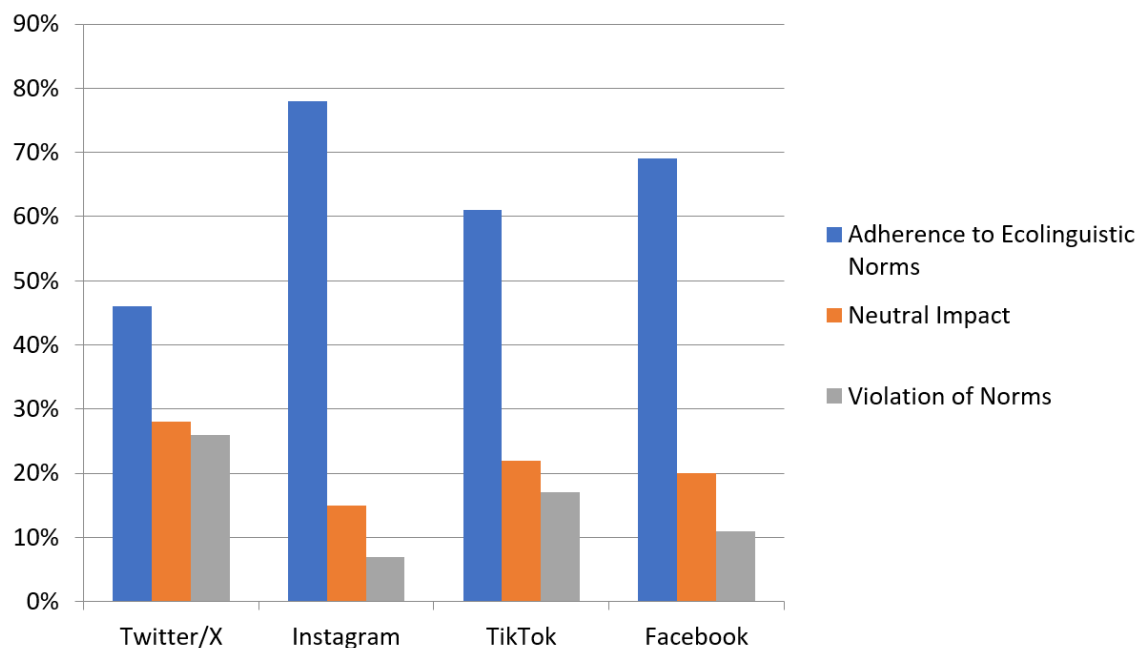


Figure 1: Compliance with ecolinguistic norms across social media platforms.

4. Conclusions

Thus, language ecology or ecolinguistics has become an example of the integration of humanities research. This is a new direction of linguistic studies, which emerged in the late XXth century at the confluence of sociolinguistics, psycholinguistics, and linguophilosophy and now is in the process of formation. Ecolinguistics deals with the study of peculiarities of the language environment of humans and society functioning as a determining factor in the development of language and speech, i.e. researches are conducted based on ecocentrism. Under the conditions of sustainable development of society establishment on a global scale, the ecocentric paradigm is becoming the dominant one for scientific researches in general, and linguistic research, in particular.

Language ecology is a branch of modern linguistics that studies the relationships between a human and the world around them, which has a direct impact on the consciousness and worldview of the individual in the system of interaction with nature.

The study found that Social Media Platforms do not fully comply with ecolinguistic standards, as they contain linguotoxic elements that threaten the quality of communication in the virtual environment, namely: algorithmic emotionality, built-in genre formats, normalization of toxic practices.

The ecological dimension of communication varies considerably across platforms. This reinforces the concept of social media as linguistic ecosystems, where language practices are shaped by algorithmic, genre-specific, and cultural expectations of the medium. The ecolinguistic perspective adds a critical layer to understanding how language either contributes to or erodes the well-being of digital communication environments.

The most important specific feature of a quality Social Media Platform is its ecolinguistic friendliness that ensures the realization of the communicative goal and does not cause a detrimental effect on the language environment and the recipient.

Declaration on Generative AI

The authors have not employed any Generative AI tools.

References

- [1] L. M. Hrytsenko, Features of virtual discourse, *Young Scientist* 6 (2011) 25–31.
- [2] L. F. Kompantseva, Internet linguistics: cognitive-pragmatic and linguo-cultural approaches, Knowledge, Luhansk, 2008.
- [3] D. Crystal, *Language and the Internet*, Cambridge University Press, Cambridge, 2001.
- [4] O. Kovtun, N. Khaidari, T. Harmash, N. Melnyk, S. Gnatyuk, Communication in civil aviation: Linguistic analysis for educational purposes, in: *CEUR Workshop Proceedings*, volume 2588, 2019.
- [5] E. Haugen, The ecology of language, *The Linguistic Reporter. Supplement* (1971) 19–26.
- [6] A. Iatsyshyn, et al., Application of augmented reality technologies for education projects preparation, in: *CEUR Workshop Proceedings*, volume 2643, 2020, pp. 134–160.
- [7] K. Taranenko, Linguistic ecology in the context of modern studies, <http://www.baltijapublishing.lv/omp/index.php/bp/catalog/download/139/4073/8504-1?inline=1>, 2024.
- [8] Facebook, <https://www.facebook.com>, 2025.
- [9] Twitter (X), <https://twitter.com>, 2025.
- [10] Instagram, <https://www.instagram.com>, 2025.
- [11] Tiktok, <https://www.tiktok.com>, 2025.
- [12] A. Iatsyshyn, et al., Application of open and specialized geoinformation systems for computer modelling studying by students and phd students, in: *CEUR Workshop Proceedings*, volume 2732, 2020, pp. 893–908.
- [13] T. LeVasseur, Defining ecolinguistics?: Challenging emic issues in an evolving environmental discipline, *Journal of Environmental Studies and Sciences* (2014). doi:10.1007/s13412-014-0198-4.
- [14] S. V. Steffensen, A. Fill, Ecolinguistics: the state of the art and future horizons, *Language Sciences* 41 (2014) 6–25.
- [15] S. Chen, Language and ecology: A content analysis of ecolinguistics as an emerging research field, *Ampersand* 3 (2016) 108–116.
- [16] O. Popov, et al., Immersive technology for training and professional development of nuclear power plants personnel, in: *CEUR Workshop Proceedings*, volume 2898, 2021, pp. 230–254.
- [17] D. Nettle, S. Romain, *Vanishing Voices: The Extinction of the World's Languages*, Oxford University Press, New York, 2002.
- [18] M. A. K. Halliday, New ways of meaning. the challenge to applied linguistics, in: A. Fill, P. Mühlhäusler (Eds.), *The Ecolinguistics Reader: Language, Ecology and Environment*, Continuum, London, 2001, pp. 175–202.
- [19] A. Stibbe, An ecolinguistics approach to critical discourse studies, *Critical Discourse Studies* 11 (2014) 117–128. doi:10.1080/17405904.2013.845789.
- [20] S. Dorda, The problem of language policy as one of the approaches to linguistic-ecological studies, *Worldview – Philosophy – Religion: a collection of scientific works* 7 (2014) 25–30.
- [21] T. V. Yakhontova, *Linguistic Genology of Scientific Communication*, Publishing center of LNU named after Ivan Franko, Lviv, 2009.
- [22] K. Crowston, *Internet genres*, Syracuse University School of Information Studies, Syracuse, 2010.
- [23] O. Horoshko, New convergent genre 2.0-tweeting, *Bulletin of Lviv University. Philological Series* 52 (2011) 210–223.
- [24] O. O. Zhigalina, Blog as a hypergenre of internet communication, *Psycholinguistics* 4 (2009) 210–216.
- [25] Social media as communicative genres, https://www.researchgate.net/publication/279505120_Social_media_as_communicative_genres, 2025.
- [26] Social semiotics and social media: A critical case study of instagram, https://www.ijscsl.com/article_701121_6bd3fd497be9dfe7a6c4e1d1fd47b0c3.pdf, 2025.
- [27] Multimodal communication on social media: A study of tweets, <https://journals.sagepub.com/doi/pdf/10.1177/14614448211012372>, 2025.