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THE SEMIOTIC NATURE OF VISUAL SIGNS IN DIGITAL COMMUNICATION

Abstract

This article examines the semiotic nature of visual signs in digital communication, focusing on their typology, communicative functions, and role in shaping contemporary multimodal discourse. The study foregrounds how visual elements such as emojis, stickers, GIFs, memes, logograms, pictograms, and other graphical modifications encode denotative and connotative meanings in the graphic communication of the internet language. As digital interaction increasingly relies on rapid, condensed and affectively rich cooperation, visual signs become key tools for expressing attitudes, emotions, social evaluations and pragmatic intentions. The article situates visual signs within classical semiotic traditions, describing their manifestation as icons, indices and symbols, and analyzes their operational mechanisms in online environments. The evolution of graphic writing provides historical grounding for understanding the multimodal semiotic sphere formed in digital communication from pictographic and logographic systems to today's typographic modifications. Visual signs are shown to fulfill the functions of information transmission, emotional intensification, contextual substitution and discourse organization. They also reshape perception by highlighting implicit meaning, signaling stance and constructing sociocultural identities. The findings emphasize that digital visual signs represent a dynamic, generative and transformative semiotic system that continues to influence global communication practices.

Keywords:

visual signs, digital communication, semiotics, emojis, multimodality, pictogram, logogram, index, icon, sociopragmatics.

Introduction

The rapid expansion of digital technologies and the global spread of the internet have fundamentally transformed the ways in which people communicate, exchange information, and construct meaning. In contrast to traditional face-to-face, written, and audio-visual modes of interaction, contemporary online communication has evolved into a highly multimodal environment where linguistic, visual, auditory, and symbolic resources converge. Within this dynamic communicative space, visual signs, such as emojis, stickers, GIFs, memes, pictograms, logograms, and other graphic modifications play an increasingly significant role. They function not only as supplementary elements to verbal text but as autonomous semiotic units capable of transmitting emotional nuance, social evaluation, contextual framing, and pragmatic intent. Therefore, digital

visual signs have become indispensable tools in constructing meaning and shaping interpersonal relations in online discourse.

The semiotic nature of these visual elements reveals a complex interplay of denotative and connotative meanings, rooted in the classical triad of sign types proposed by C. S. Peirce: icons, indexes, and symbols. For instance, emojis often operate as icons by visually resembling emotions or objects, while reaction GIFs may serve as indexes pointing to situational context or interpersonal stance. Memes, on the other hand, frequently function as symbols embedded in cultural knowledge, intertextual references, and shared societal values. This layered semiotic structure allows visual signs to express meanings that are difficult or impossible to convey through verbal language alone, including irony, sarcasm, empathy, or complex affective states.

The emergence and widespread use of visual signs in digital communication are closely linked to broader socio-technological changes. The democratization of information technologies, the rise of social media platforms, and the acceleration of communication have fostered a strong need for fast, compressed, and emotionally rich interaction. Users increasingly prefer combining short textual fragments with expressive visual elements, as this hybrid model of communication offers greater immediacy and clarity. Moreover, visual signs often serve as strategies for mitigating communicative ambiguity in computer-mediated messages where vocal cues, facial expressions, and body language are absent. By filling these paralinguistic gaps, digital visuals enhance interpersonal understanding and allow interlocutors to construct more nuanced and socially sensitive exchanges.

Historically, the development of digital visual signs can be viewed as a continuation of long-standing traditions in the evolution of graphic writing. From ancient pictograms and ideograms to medieval mnemonics and logographic scripts, human societies have consistently relied on visual symbolic systems to represent meaning. Contemporary digital signs, though technologically advanced, retain this core semiotic principle: they compress information into immediately recognizable forms that are cognitively efficient and culturally resonant. The typological connections between ancient and modern visual signs highlight the continuity of human semiotic behavior, demonstrating how digital communication revitalizes and transforms earlier forms of symbolic representation.

Visual signs in the internet language fulfill a wide range of communicative functions, including informing, contextualizing, replacing verbal content, adding emotional or aesthetic appeal, and signaling attitudes or intentions. Their multimodality makes them highly adaptable across platforms, user groups, and cultural environments. Yet their interpretation remains deeply rooted in sociocultural norms and linguistic backgrounds. For example, emoji usage patterns differ significantly among Uzbek, Russian, Japanese, English, and Spanish speakers, reflecting distinct emotional codes, interactional styles, and cultural conventions. Similarly, platform-specific affordances shape the frequency and style of visual sign usage: Telegram encourages diverse graphic expressions, Facebook prioritizes informational context, while platforms like Instagram and TikTok integrate visual signs into creative media formats. This diversity indicates that visual signs form a flexible and evolving semiotic system influenced by technological designs and social practices.

Understanding the semiotic nature of visual signs is essential for analyzing contemporary digital discourse. As global communication continues to shift toward visuality and multimodality, researchers must investigate how these signs function as meaningful linguistic, cultural, and cognitive tools. They are no longer marginal additions to text but core components of digital interaction, capable of constructing identities, mediating emotions, and shaping interpersonal dynamics. Therefore, exploring their typology, functions, and sociopragmatic roles contributes to a deeper understanding of digital language, multimodal communication, and the transformation of meaning-making in the 21st century.

Literature Review

The study of visual signs and their semiotic functions in digital communication has gained considerable attention in recent years, reflecting the rapid expansion of internet-based interaction and multimodal communication. Semiotics, as a theoretical framework, provides a foundational lens for analyzing how signs convey meaning beyond verbal language. Early semiotic theorists, including Peirce and Saussure, distinguished between denotative and connotative dimensions of signs, highlighting the distinction between icons, indexes, and symbols [Lizska, James Jacob, 1996; Saussure, 1986]. This classification remains essential for understanding visual signs in online contexts, where images, emojis, and typographic modifications operate as complex semiotic units.

Recent research emphasizes the role of visual signs in shaping digital discourse. Emojis, stickers, GIFs, and memes serve not only as expressive tools but also as instruments for coding, modifying, and transforming textual messages [Danesi, 2004]. Studies have shown that these signs fulfill multiple communicative functions: they clarify tone, indicate affect, provide social commentary, and create intertextual or culturally specific meanings. For instance, emojis are frequently analyzed as quasi-linguistic signs, functioning as substitutes for non-verbal cues in face-to-face communication, such as facial expressions and gestures [Crystal, 2001].

The typographic and paraverbal dimensions of visual communication have also been investigated. Text modifications, including bold, italics, capitalization, spacing, and punctuation, act as semiotic markers, influencing the perception, rhythm, and emphasis of messages [Baron, 2015]. Such graphic modifications operate alongside emoji-based elements, producing multimodal texts that convey meaning through both linguistic and visual channels [Komilov, 2020: 128]. Researchers further highlight the generative potential of visual signs, demonstrating that users can creatively combine multiple signs into new configurations, adapting them to context-specific communicative needs [Zappavigna, 2012].

Cross-cultural considerations are another critical aspect of contemporary studies. The interpretation of visual signs is mediated by linguistic, social, and cultural frameworks, which influence the meaning-making process. For example, a single emoji may convey humor in one culture but irony or disapproval in another. Similarly, memes often rely on shared cultural knowledge, making them potent tools for social critique or humor but challenging for cross-cultural comprehension [Shifman, 2014].

Despite extensive research on the semiotic functions of visual signs, gaps remain regarding their systematic classification and functional mapping within digital discourse. Existing studies tend to focus on individual sign types or specific platforms, leaving limited comparative analyses across multiple semiotic elements, such as emojis, GIFs, memes, and typographic modifications [Komilov, Dehkonov, 2022: 1072]. Furthermore, while much attention has been given to expressive and emotional functions, less emphasis has been placed on the transformative and generative properties of visual signs in multimodal configurations [Ugli, 2020: 50].

Overall, the literature suggests that visual signs in digital communication constitute a rich, semiotically complex system, integrating denotative, connotative, and paraverbal functions. They are not only expressive tools but also carriers of social, cultural, and pragmatic meaning, shaping contemporary internet-mediated discourse. This study aims to build on previous research by systematically examining the types, functions, and multimodal potential of visual signs, contributing to a comprehensive understanding of their semiotic role in digital communication.

Materials and Research Methods

The methodological foundation of this research is based on a combination of qualitative, descriptive, comparative, and semiotic-analytical approaches that allow for a systematic examination of visual signs functioning in contemporary digital communication environments. The study draws on an interdisciplinary corpus consisting of materials from linguistics, semiotics, media studies, cognitive science, and internet communication research. The primary empirical materials

include screenshots, message logs, social media posts, interface elements, emojis, stickers, GIFs, memes, and algorithmically generated visuals sourced from widely used digital platforms such as Telegram, Instagram, X (Twitter), TikTok, Facebook, Reddit, and YouTube. These materials were selected through purposive sampling to represent communicative acts that rely heavily on visual signification and multimodal meaning construction. The dataset spans 2020–2025, a period marked by rapid developments in digital visual practices, ensuring both relevancy and representativeness.

A multi-stage analytical process was employed. First, all collected visual units were categorized according to their structural and functional characteristics. Structural parameters included iconicity, indexicality, symbolic load, schematic structure, degree of abstraction, color patterns, spatial organization, and compositional features. Functional parameters included pragmatic intent (expressive, phatic, directive, referential, metalinguistic), communicative role (emotion marking, discourse regulation, emphasis, substitution of verbal text), and interactional context (peer-to-peer messaging, public post, comment thread, community discourse, algorithmically recommended content). During this stage, visual signs were also evaluated in terms of semiotic coding systems and multimodal integration with verbal or paraverbal elements. To ensure analytical coherence, the study relied on triadic semiotics of Peirce, dyadic principles of Saussure and contemporary frameworks on digital signification.

In the second stage, the selected visual signs were analyzed using qualitative content analysis techniques. Each unit was examined for its denotative meaning, connotative potential, socio-cultural references, intertextuality, and communicative function in digital discourse. Special emphasis was placed on identifying mechanisms of semantic condensation, graphical stylization, and symbolic transfer that are particularly characteristic of internet-based visual communication. The analysis included a comparison between culturally embedded signs (e.g., traditional symbols adapted for online use) and globally circulating signs (e.g., standard emoji sets), allowing the study to highlight both culturally specific and universal aspects of digital semiotics.

For comparative purposes, examples from different linguistic and cultural communities, specifically Uzbek-speaking, Russian-speaking, English-speaking, and globally mixed online environments were examined. This cross-cultural comparison made it possible to determine to what extent digital visual signs function as culturally conditioned phenomena or as transnational semiotic units shaped by global media platforms. Additionally, special attention was given to the evolution of sign forms across updates of digital interfaces and technological innovations, including changes in emoji design, introduction of new communication features, and algorithm-driven personalization of visual content.

To ensure reliability, all analytical interpretations were triangulated through repetitive observation, corpus comparison, and theoretical alignment with established semiotic principles. Where necessary, additional interpretations were cross-validated with existing scholarly literature to avoid overgeneralization. The methodology also incorporates elements of ethnographic observation of digital communities, including participation in public online groups, thematic forums, and comment sections, enabling naturalistic observation of how visual signs are used in authentic communication settings. This combination of methods ensured a comprehensive and multi-layered examination of the semiotic nature of visual signs in digital communication.

Results and Discussion

The analysis of visual signs in digital communication demonstrates that their semiotic potential extends far beyond simple illustration of verbal messages. The data show that visual signs including emojis, stickers, GIFs, memes, typographic modifications, and other graphical markers fulfill multiple communicative functions simultaneously. Denotatively, emojis and stickers convey specific emotional states, actions, or objects, while connotatively, they carry cultural, social, and intertextual meanings. For instance, the heart emoji can denote affection universally but may acquire situational or ironic connotations depending on the context, user community, or accompanying text. Similarly, memes integrate iconic, indexical, and symbolic elements to encode

humor, social critique, or commentary on political and cultural events, often in a condensed and multilayered manner.

Table 1 – Functional Characteristics and Semiotic Roles of Visual Signs in Digital Communication

Type of Visual Sign	Denotative Function	Connotative Function	Paraverbal / Expressive Role	Cross-Cultural Observation	Generative /Adaptive Features
Emoji	Express specific emotions, actions, objects	Cultural, ironic, social meanings	Emphasize tone, rhythm, intensity, affect	Heart ❤️ or laughing 😂 may have slightly different nuances across cultures	Users combine emojis to create hybrid messages or express nuanced states
Sticker	Illustrate actions, reactions	Convey humor, affect, situational context	Enhance visual expressivity, indicate response or feedback	Frequently adapted to local cultural norms	Can be personalized or created to convey unique meaning
GIF	Represent dynamic actions, events	Emphasize emotional, humorous, or social commentary	Intensify affect, mimic non-verbal cues	Universally intelligible but context-specific meanings exist	Allows creation of novel multimodal sequences and reactions
Meme	Depict social, political, or humorous messages	Encode intertextual, cultural, or critical meanings	Combine text and visuals for evaluative content	Cross-cultural adaptation possible; locally specific references	Continuously evolves; users generate new forms and hybrid formats
Typographic Modifications (bold, italic, caps, spacing, punctuation)	Highlight, emphasize, structure information	Convey intensity, irony, tone, urgency	Regulate rhythm, emphasis, voice projection	Some variations are culture-specific	Dynamic application in combination with other visual signs
Logograms/Pictograms	Symbolize objects, concepts, ideas	Encode symbolic or indexical meaning	Assist cognitive recognition, reduce textual complexity	Some symbols widely understood, others culturally contextual	

Table 1 presents a comprehensive overview of the main types of visual signs employed in digital communication and their functional characteristics. The table categorizes visual signs into six key types: emoji, stickers, GIFs, memes, typographic modifications, and logograms/pictograms. Each type is analyzed according to five dimensions: denotative function, connotative function, paraverbal or expressive role, cross-cultural observations, and generative/adaptive features.

The denotative function column reflects the direct, literal meaning conveyed by each visual sign, such as emotions, actions, or objects. The connotative function column highlights the symbolic, cultural, or social meanings associated with these signs, including irony, humor, or social commentary. The paraverbal/expressive role column identifies how visual signs influence the tone, rhythm, and emotional intensity of communication, effectively acting as non-verbal cues within digital interactions.

Cross-cultural observations emphasize the variability in interpretation and usage of visual signs across different linguistic and cultural contexts, noting similarities and potential differences in meaning. Lastly, the generative/adaptive features column illustrates the flexibility of visual signs, including their potential for user-driven creativity, hybridization, and multimodal integration.

Overall, Table 1 provides a structured representation of the semiotic and communicative potential of visual signs in digital environments, demonstrating how they extend beyond textual language to create rich, multimodal, and culturally nuanced interactions.

The results indicate that visual signs operate as multimodal semiotic units that often replace, complement, or intensify verbal communication. Typographic variations, such as capitalization, font style, spacing, and punctuation enhance expressive qualities and regulate the rhythm, emphasis, and perceived tone of digital messages. Repeated punctuation (!!!, ???), bold or italicized text, and combined emoji clusters exemplify the paraverbal and visual layers that shape interpretive frameworks for readers. In addition, the study reveals that the combination of verbal and visual elements often creates hybrid metamessages that convey nuanced emotional or evaluative content not easily expressed through words alone.

Cross-cultural comparison shows notable differences in the use of visual signs among various linguistic communities. For example, Russian-speaking and Uzbek-speaking users frequently combine typographic innovations with culturally specific emoji usage to signal humor, irony, or social identity. English and globally oriented communities rely more on standardized emoji sets and GIFs, which are largely intelligible across cultures. Despite these variations, certain visual units, such as common emojis and GIF reactions function as near-universal semiotic codes within digital communication platforms, contributing to a shared global visual language. This duality between culturally specific and transnational signs underscores the role of visual communication as both socially conditioned and universally intelligible.

Furthermore, the study highlights the generative and adaptive qualities of visual signs. Continuous updates to social media interfaces and the expansion of emoji libraries have encouraged users to innovate by creating personalized combinations, hybrid memes, and new stylized graphic signs. These findings confirm that digital visual signs are not static; they evolve dynamically in response to technological developments, platform affordances, user creativity, and social interaction patterns. Visual signs thus represent both a reflection of digital culture and a tool for shaping discourse, allowing communicators to encode, decode, and interpret multimodal messages with high efficiency and expressive depth.

From a semiotic perspective, visual signs integrate iconic, indexical, and symbolic dimensions, allowing for layered interpretation. Icons replicate or resemble real-world objects or gestures, indices point to situational context or user intent, and symbols encode culturally or socially conventionalized meanings. When combined with verbal and paraverbal elements, these signs create a complex semiotic ecosystem that shapes interaction, interpretation, and social meaning in online environments. The research indicates that users unconsciously and strategically employ visual signs to regulate discourse, assert identity, negotiate relationships, and convey affective and evaluative nuances, thereby enriching the semiotic repertoire of digital communication.

Conclusion

The study demonstrates that visual signs in digital communication are fundamental semiotic units that perform multiple functional roles. They combine denotative and connotative properties, generate multimodal meaning, and contribute to the evolution of digital language. Visual signs,

such as emojis, stickers, GIFs, memes, and typographic modifications operate as hybrid units capable of complementing, intensifying, or even substituting verbal text. They enhance communicative efficiency, provide expressive depth, and encode social, cultural, and emotional content in ways unattainable through verbal language alone.

The results indicate that visual signs are culturally flexible yet increasingly standardized, forming a shared global semiotic system while retaining local variations shaped by social norms, linguistic communities, and cultural practices. They function as generative tools, enabling users to create novel combinations, hybrid messages, and multimodal discourse patterns, which further illustrate the dynamic and adaptive nature of digital communication. Importantly, the integration of visual, verbal, and paraverbal signs contributes to effective message interpretation, discourse regulation, and identity expression, reflecting both the functional and pragmatic dimensions of online interaction.

Overall, the findings underscore the semiotic richness of digital communication and highlight the critical role of visual signs in shaping contemporary online discourse. Future research should continue exploring the evolving interplay between visual signs and linguistic structures, particularly in cross-cultural and cross-platform contexts, as digital communication practices expand and new technologies further transform multimodal meaning-making. The study confirms that understanding the semiotic nature of visual signs is essential for analyzing digital literacy, online social interaction, and the broader evolution of language in the 21st century.

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СЕМИОТИЧЕСКАЯ ПРИРОДА ВИЗУАЛЬНЫХ ЗНАКОВ В ЦИФРОВОЙ КОММУНИКАЦИИ

Аннотация. В данной статье рассматривается семиотическая природа визуальных знаков в цифровой коммуникации с акцентом на их типологии, коммуникативных функциях и роли в формировании современного мультимодального дискурса. В исследовании рассматриваются как визуальные элементы, как эмодзи, стикеры, GIF-изображения, мемы, логограммы, пиктограммы и другие графические модификации, кодируют денотативные и коннотативные значения в графической коммуникации интернет-языка. Поскольку цифровое взаимодействие всё больше опирается на быстрое, концентрированное и аффективно насыщенное взаимодействие, визуальные знаки становятся ключевыми инструментами выражения установок, эмоций, социальных оценок и прагматических намерений.

В статье визуальные знаки рассматриваются в контексте классических семиотических традиций, описывая их проявления в виде иконок, индексов и символов, а также анализируются механизмы их функционирования в онлайн-среде. Эволюция графического письма предоставляет историческую основу для понимания мультимодальной семиотической сферы, сформировавшейся в цифровой коммуникации от пиктографических и логографических систем до современных типографских модификаций. Показано, что визуальные знаки выполняют функции передачи информации, эмоциональной интенсификации, контекстуального замещения и организации дискурса. Они также меняют восприятие, выявляя неявный смысл, сигнализируя о позиции и формируя социокультурную идентичность. Результаты исследования подчёркивают, что цифровые визуальные знаки представляют собой динамичную, генерирующую и трансформирующую семиотическую систему, которая продолжает влиять на глобальные коммуникационные практики.

Ключевые слова: визуальные знаки, цифровая коммуникация, семиотика, эмодзи, мультимодальность, пиктограмма, логограмма, индекс, икона, социопрагматика.

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ЦИФРЛЫҚ КОММУНИКАЦИЯДАҒЫ ВИЗУАЛДЫ БЕЛГІЛЕРДІҢ СЕМИОТИКАЛЫҚ СИПАТЫ

Аңдатпа. Бұл мақалада цифрлық коммуникациядағы визуалды белгілердің семиотикалық сипаты қарастырылады. Зерттеу барысында олардың типологиясына, коммуникативтік функцияларына және заманауи мультимодальды дискурсты қалыптастырудағы рөліне баса назар аударылған. Мақалада интернет тілінде эмодзи, стикерлер, GIF-кескіндер, мемдер, логограммалар, пиктограммалар және басқа да графикалық модификациялар сияқты визуалды элементтердің денотаттық және коннотаттық мағыналарды қалай кодтайтыны талданады.

Цифрлық өзара әрекет барған сайын жылдам, шоғырландырылған және аффективті түрде қанық өзара іс-қимылға негізделгендіктен, визуалды белгілер көзқарастарды,

эмоцияларды, әлеуметтік бағалаулар мен прагматикалық ниеттерді білдірудің негізгі құралына айналуда.

Зерттеуде визуалды белгілер классикалық семиотикалық дәстүрлер тұрғысынан сипатталып, икона, индекс және белгі ретіндегі көріністері мен онлайн-ортадағы атқаратын қызметіне талдау жасалады.

Графикалық жазудың эволюциясы – пиктографиялық және логографиялық жүйелерден заманауи типографиялық модификацияларға дейін – цифрлық коммуникацияда қалыптасқан мультимодальды семиотикалық кеңістікті түсінуге тарихи негіз болады. Визуалды белгілердің ақпарат беру, эмоционалды қарқындылықты арттыру, контекстік алмастыру және дискурсты ұйымдастыру қызметін атқаратыны дәлелденген. Олар сондай-ақ астарлы мағынаны айқындап, ұстанымдарды білдіру және әлеуметтік-мәдени бірегейлікті қалыптастыру арқылы қабылдау процесін өзгертеді. Зерттеу нәтижелері цифрлық визуалды белгілердің жаһандық коммуникациялық тәжірибеге ықпал етуін жалғастырып жатқан динамикалық, генерациялаушы және трансформациялаушы семиотикалық жүйе екенін айғақтайды.

Тірек сөздер: визуалды белгілер, цифрлық коммуникация, семиотика, эмодзи, мультимодальдылық, пиктограмма, логограмма, индекс, икона, әлеуметтік прагматика.

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