



DIGITAL PARALINGUISTICS AS AN EXTENSION OF CLASSICAL PARALINGUISTICS: FROM PROSODY AND GESTURES TO EMOJIS, GRAPHICONS, AND VISUAL PROSODY

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Abstract. This theoretical review argues that digital paralinguistics is not a rupture with classical paralinguistic systems but rather their systematic re-encoding. The study synthesises the classical traditions of paralanguage, kinesics, proxemics, and cultural display rules with contemporary research on computer-mediated communication. It demonstrates how affective, illocutionary, regulatory, and social-indexical functions formerly performed by voice, body, and physical space have migrated to the graphic-textual plane of the screen. The article identifies five functional mappings from oral and face-to-face channels to written and digital paralinguistic channels: voice qualities are re-encoded as typographic prosody; vocal characterisers as emoticons and facial emoji; vocal segregates as discourse particles and metacommunicative emoji; kinesics as object and body emoji, GIFs, and stickers; and proxemics and chronemics as response latency, co-presence markers, and platform affordances. Cross-cultural research on emoji interpretation operationalises cultural display rules for the digital age, in which individualism and collectivism predict emoji use much as they predict facial expression in face-to-face interaction. The review connects Anglo-American frameworks with the Russian-language paralinguistic tradition and recent Uzbek scholarship. It shows that the graphicon taxonomy and the concept of paralanguage developed in post-Soviet linguistics are theoretically compatible. The transition from oral to digital communication is characterised by three theses: functional continuity, structural discontinuity, and the asymmetric re-encoding of paralinguistic information. Methodological implications for corpus-based studies of emoji and graphicons in Uzbek-language digital discourse are discussed.

Keywords: paralinguistics; digital communication; emoji; graphicons; visual prosody; computer-mediated communication; cultural display rules; linguaculturology.

RAQAMLI PARALINGVISTIKA KLASSIK PARALINGVISTIKANING DAVOMI SIFATIDA: PROSODIYA VA IMO-ISHORALARDAN EMOJI, GRAFIKON VA VIZUAL PROSODIYAGACHA

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Annotatsiya. Maqolada raqamli paralingvistika klassik paralingvistik tizimlardan uzilish emas, balki ularning tizimli ravishda qayta kodlanishi ekanligi ta'kidlanadi. Tadqiqot paratil, kinesika, proksemika va madaniy namoyish qoidalarining an'anaviy tizimlarini kompyuter vositasidagi muloqot bo'yicha zamonaviy tadqiqotlar bilan uyg'unlashtiradi hamda ilgari ovoz, tana va jismoniy makon orqali amalga oshirilgan affektiv, illokutsion, tartibga soluvchi va ijtimoiy-indeksikal funksiyalarning raqamli muhitda qanday ko'chib o'tganini ko'rsatadi. Maqolada raqamli paralingvistika funksional xarakterdagi ko'p qavatli qayta kodlash jarayoni sifatida tavsiflanadi: ovoz intonatsiyasining tipografik prosodiyaga aylanishi, vokal xususiyatlarning emojilar va yuz ifodali emojilar orqali ifodalanishi, imo-ishoralarning diskurs partiklari va metakommunikativ emojilar shaklida qayta talqin qilinishi, kinesik va tana emojilari, GIFlar hamda stikerlar, shuningdek, proksemika va xronemikaning javob berish kechikishi, bir vaqtda ishtirok etish ko'rsatkichlari hamda platforma imkoniyatlari orqali namoyon bo'lishi shular jumlasidandir. Emoji talqini bo'yicha madaniyatlararo tadqiqotlar raqamli davr uchun madaniy namoyish qoidalarining shakllanishini yoritadi; bunda individualistik va kollektivistik qadriyatlar odamlarning emojilarni yuzma-yuz muloqotdagi yuz ifodalarini qanday talqin qilganlariga o'xshash tarzda sharhlashiga ta'sir ko'rsatadi. Sharhda anglo-amerika yondashuvlari rus tilshunosligidagi paralingvistik an'ana hamda o'zbek olimlarining tadqiqotlari bilan qiyoslanadi. Shuningdek, maqolada o'zbek tilidagi raqamli muloqotda paralingvistikaga taalluqli emoji va grafetik belgilar bo'yicha olib borilgan cheklangan tadqiqotlar ko'rib chiqiladi. Tadqiqot uchta asosiy tezisni ilgari suradi: funksional uzluksizlik, strukturaviy diskontinuitet va paralingvistik axborotning assimetrik qayta kodlanishi. Yakunda o'zbek tilidagi raqamli diskursda emoji va grafikonlarni korpus asosida o'rganish uchun metodologik tavsiyalar muhokama qilinadi.

Kalit so'zlar: paralingvistika; raqamli kommunikatsiya; emoji; grafikonlar; vizual prosodiya; kompyuter vositachiligidagi kommunikatsiya; madaniy ko'rsatish qoidalari; lingvokulturologiya.

Introduction

The bimodal architecture of human communication — verbal and nonverbal — has been a stable axiom of linguistics for almost seventy years, ever since Ruesch and Kees [Ruesch & Kees, 1956: 189–205] coined

the term “nonverbal communication” in their influential monograph *Nonverbal Communication: Notes on the Visual Perception of Human Relations*. The digital era of the late twentieth and early twenty-first centuries, however, has destabilised one half of this binary in an unexpected way: it has not eliminated nonverbal signalling but has displaced it from the channels of voice, body, and physical space to the graphic-textual plane of the screen. In this theoretical review, we argue that what is now commonly referred to as “digital paralinguistics” should be theorised not as a discrete new field but as a systematic extension and re-encoding of the classical paralinguistic systems established between 1950 and 1990. Emojis, graphicons [Herring & Dainas, 2017: 2185–2194], and visual prosody [McCulloch, 2019] are the typographic and pixelated descendants of Trager’s [Trager, 1958: 1–12] voice qualities, Birdwhistell’s [Birdwhistell, 1970: 257–268] kinesics, and Hall’s [Hall, 1966: 116–125] proxemic envelopes.

For Uzbek and Russian readers, two empirical realities make this synthesis especially timely. First, everyday communication in Uzbekistan has decisively shifted to messaging platforms. By 2025, Telegram had become the dominant messenger in Uzbekistan, with industry estimates indicating about 25 million users, equivalent to around 76% of the country’s internet audience. Telegram therefore functions as a central platform for interpersonal communication and other forms of interaction, while Instagram, WhatsApp, and locally developed platforms meet the remaining digital communication needs. In this context, paralinguistic information—the affective, illocutionary, turn-regulatory, and stance-marking functions previously carried by intonation, gesture, facial expression, and interpersonal distance—must be re-encoded graphically because text-based asynchronous messaging offers no equivalent channel. Second, the linguocultural tradition derived from Kolshansky’s *Паралингвистика* [Kolshanskii, 1974/2014: 7] and Kreidlin’s *Невербальная семиотика: Язык тела и естественный язык* [Kreidlin, 2002] already offers powerful theoretical tools, particularly the concepts of paralanguage, nonverbal code, and emotiology, that correspond closely to Anglophone frameworks of graphicons and visual prosody. Yet these two scholarly traditions have developed in near-total isolation from each other, and this article attempts to bridge that gap.

Classical paralinguistics: the foundational paradigm (1950–2010)

The founding decades: paralanguage, kinesics, and proxemics

In the 1950s, a small band of scholars working at the crossroads of structural linguistics, anthropology and psychiatry constructed the

conceptual architecture of paralinguistics as a unified field of inquiry. The phrase “nonverbal communication” was coined as an umbrella term by Jürgen Ruesch and Weldon Kees [Ruesch & Kees, 1956: 189–205] in *Nonverbal Communication: Notes on the Visual Perception of Human Relations*, published by the University of California Press. Ruesch and Kees identified three subsystems: sign language (codified gestures with dictionary-like meanings), action language (movement not primarily intended for communication but interpretable as such), and object language (the intentional or unintentional display of material objects, clothing, and environmental arrangements). Thus, in this three-way division, “nonverbal communication” was defined as a superordinate category that included the paralinguistic, kinesic, proxemic, haptic, and artefactual channels.

In this broader context, George L. Trager formalised the term “paralanguage” in his 1958 paper “Paralanguage: A First Approximation” [Trager, 1958: 1–12]. Trager, along with Edward T. Hall, Henry Lee Smith, Charles F. Hockett, and Ray Birdwhistell, contributed to the U.S. Foreign Service Institute in Washington, D.C., and proposed a three-category taxonomy that remains operationally valid today. The voice qualities were pitch range, vocal lip control, glottis control, pitch control, articulation control, rhythm control, resonance and tempo. Vocal characteristics were laughter, crying, whispering, yawning, belching, and other physiological vocalisations that modify or replace speech. Vocal segregates like “uh-huh”, “shh”, “hm”, and clicking sounds are fillers, hesitations, and discourse particles that punctuate but do not form lexical content [Trager, 1958: 1–12; Trager, 1961: 17–21]. Trager’s typology was premised on the structural-linguistic assumption that paralinguistic phenomena could be catalogued, classified, and studied with the same rigour as phonemes and morphemes, despite paralinguistic features being gradient rather than discrete and operating simultaneously rather than sequentially with respect to verbal content.

Ray L. Birdwhistell’s *Introduction to Kinesics* [Birdwhistell, 1952] and his later seminal work *Kinesics and Context: Essays on Body Motion Communication* [Birdwhistell, 1970: 257–268] were intended to extend the structural-linguistic programme to body motion. Birdwhistell suggested that body motion could be broken down into minimal units (kines), functionally equivalent classes (kinemes) and complex meaningful groupings (kinemorphs) in direct analogy to phones, phonemes, and morphemes. His empirical work consisted of microanalysis of filmed interactions frame-by-frame, resulting in catalogues of head movements, facial configurations, hand gestures and postural shifts. While the strict linguistic analogy was later criticised [Kendon, 1972: 177–210; Knapp,

1972], Birdwhistell's core idea that body motion is culturally patterned, learned, context-dependent and systematically interpretable became axiomatic in the field. His claim that kinesics had no universals [Birdwhistell, 1970: 257–268] because gestural codes are culture-specific foreshadowed the cross-cultural emoji debates of the 2010s and 2020s.

Edward T. Hall, in *The Hidden Dimension* [Hall, 1966: 116–125], developed the concept of proxemics: the study of how humans use space as a culturally variable system of communication. Hall defined four concentric zones of interpersonal distance within North American middle-class culture: intimate distance (0–18 inches), personal distance (1.5–4 feet), social distance (4–12 feet), and public distance (12 feet or more). Each zone was associated with particular sensory modalities, types of interaction, and affective affordances. Hall also distinguished between high-context cultures, in which much information is embedded in context, relationships, and nonverbal codes, and low-context cultures, in which information is made explicit in verbal messages. He also distinguished monochronic time orientations from polychronic ones, which are fluid, relational, and multitasking. In his later work, *Beyond Culture* [Hall, 1976: 91], Hall developed these distinctions into a comprehensive cultural theory. Hall's constructs of proxemics and chronemics can be mapped directly onto digital communication. Here, "distance" is operationalised through response latency, platform choice (synchronous versus asynchronous), and the presence or absence of co-presence indicators such as "typing..." notifications.

Facial expression, emotion, and the 7-38-55 ratio

Paul Ekman and Wallace V. Friesen's research program on facial expressions of emotion in the 1960s and 1970s yielded two landmark findings. First, their cross-cultural research with the Fore people of Papua New Guinea [Ekman & Friesen, 1971: 124–129] showed that six basic emotions – happiness, sadness, anger, fear, disgust and surprise – can be identified from facial expressions across cultures, including preliterate populations with little exposure to the West. This finding was strong evidence for a biologically based, pan-human affective signalling system. However, Ekman and Friesen were quick to note that cultural display rules dictate when, how strongly, and to whom emotions may be expressed. Second, their 1969 paper "The Repertoire of Nonverbal Behavior: Categories, Origins, Usage, and Coding" [Ekman & Friesen, 1969: 49–98] proposed a five-category typology of nonverbal behaviours: emblems (gestures with direct verbal translations), illustrators (movements that accompany and reinforce speech), regulators (turn-taking and conversation

flow signals), affect displays (facial expressions of emotion), and adaptors (self-touching and object-manipulation behaviours). This typology has been adopted explicitly by researchers [Bai et al., 2019; Verheijen & Mauro, 2025: 45–62] to classify emoji pragmatic functions.

The widely cited and often misinterpreted 7-38-55 ratio from Albert Mehrabian on the relative weight of words, vocal tone, and facial expression in conveying feelings and attitudes was based on two tightly controlled experimental studies [Mehrabian & Ferris 1967: 248–252; Mehrabian & Wiener, 1967: 109–114] and popularised in *Silent Messages* [Mehrabian, 1971: 42–47] and *Nonverbal Communication* [Mehrabian 1972]. The female participants in this experiment judged the liking expressed in audio recordings of one single word (“maybe”, “really” or “oh no”) spoken in a positive, neutral or negative tone, paired with photographs of positive, neutral or negative facial expressions. Mehrabian discovered that when verbal, vocal, and facial cues were in conflict, people’s judgements were predicted by a weighted formula: total liking = 7% verbal + 38 % vocal + 55 % facial. Later popularisers dropped the experimental restrictions (single-word stimuli, female-only sample, feelings-and-attitudes domain) and extended the formula to “93 % of communication is nonverbal”, a claim that Mehrabian himself repeatedly disavowed. Even with this misapplication, the principle that affective and relational information is carried disproportionately by paralinguistic and kinesic channels rather than by lexical content remains foundational for any theory predicting the migration of these signals into digital environments when face-to-face channels are unavailable.

Cultural display rules and the Matsumoto programme

David Matsumoto’s research programme, which began in 1990, extended Ekman and Friesen’s concept of cultural display rules — culturally learned norms regulating expressive behaviour — into a large-scale, cross-national empirical project. Matsumoto [Matsumoto, 1990: 195–214] showed that, although the six basic emotions are universally recognised, the rules governing when and how they are expressed vary systematically across cultures. Matsumoto and colleagues [Matsumoto et al., 2005: 23–40; Matsumoto et al., 2008: 55–74] collected data from 32 countries and more than 5,000 respondents using the Display Rule Assessment Inventory (DRAI). Their main finding was that individualism-collectivism, Hofstede’s [Hofstede, 1980: 148–175] most robust cultural dimension, predicted overall expressivity and emotion-specific display rules: collectivist cultures prescribed greater suppression, masking, and de-amplification of negative emotions in in-group contexts, whereas

individualist cultures permitted more direct expression. Matsumoto's model is directly transferable to digital paralinguistics: the same cultural logic that determines whether a person smiles, frowns, or maintains a neutral face in face-to-face interaction now determines whether they use 😊, 😞, or no emoji in a text message and whether that choice varies according to whether the recipient is an in-group or out-group member.

The Russian-language tradition: Kolshansky and Kreidlin

Soviet and post-Soviet linguistics developed a theoretically distinct but functionally overlapping account of paralinguistics, parallel to but independent of the Anglo-American tradition. Gennady Vladimirovich Kolshansky's monograph *Paralingvistika* [Kolshanskii, 1974/2014: 7] defined paralinguistics as the study of all nonlinguistic means that accompany verbal speech and combine with it to form a unified system of communicative signs. Kolshansky's model diverged from Trager's in two ways: it considered paralanguage not as a satellite system but as a constitutive part of the total communicative act, and it emphasised the semantic functions of paralinguistic means (conveying emphasis, irony, affect, social indexicality, etc.) rather than their formal structural properties. Kolshansky's work circulated widely among Soviet linguists and semioticians and influenced later Russian scholarship on nonverbal communication, computer-mediated discourse, and emotiology.

The broadest Russian-language synthesis of nonverbal semiotics is Grigory Efimovich Kreidlin's *Neverbal'naya semiotika: Yazyk tela i estestvennyi yazyk* [Kreidlin 2002]. Kreidlin, a mathematician and linguist, provided a typology of eleven semiotic subsystems in face-to-face communication: kinesika (gestures, facial expressions, and head movements), okulezika (eye gaze and pupil dilation), akustika (paralinguistic vocal phenomena), taktesika or haptika (touch), proksemika (spatial positioning), khronemika (timing and rhythm), gastika (gustatory communication), ol'faktika (olfactory communication), dermika (blushing and other skin-based signalling), and aktsesorika (object manipulation). The inventory is much richer than the standard Anglo-American tripartite division of paralanguage, kinesics, and proxemics, although many of Kreidlin's categories (gastika, ol'faktika, dermika) have limited application to digital communication. Kreidlin's model is the standard reference framework for Russian studies of classical and digital paralanguage.

The transit from oral to digital: theoretical frameworks

Cue-filtered-out versus social information processing

In the early theory of computer-mediated communication (CMC), the so-called “cues-filtered-out” assumption was used: without the nonverbal means of face-to-face interaction, text-based CMC was thought to be impersonal, task-orientated, and affectively impoverished. The media richness theory [Daft & Lengel, 1986: 554–571] ranked communication media based on their capacity to convey equivocality-reducing information, with face-to-face interaction at the top and text-based messaging near the bottom. It is for this reason that Short et al. in *The Social Psychology of Telecommunications* [Short et al., 1976: 64–67] argued that media low in “social presence” (defined as the degree to which a medium allows communicators to experience others as psychologically present) would not be appropriate to relational and affective communication. Joseph B. Walther’s Social Information Processing (SIP) theory [Walther, 1992: 52–90] definitively discredited these predictions. Walther argued that CMC users, motivated by normal relational goals, adapt to the constraints of the text-only channel by encoding affective, relational, and identity information verbally and graphically, accumulating these cues over extended exchanges. SIP theory suggests that, over time and with sufficient message exchanges, CMC can produce the same relational results as face-to-face communication.

Joseph B. Walther’s Social Information Processing (SIP) theory [Walther, 1992: 52–90] overturned these predictions in a decisive way. Walther maintained that CMC users are driven by normal relational goals and adapt to the constraints of the text-only channel by encoding affective, relational, and identity information verbally and graphically, collecting these cues over extended exchanges. SIP theory posits that given sufficient time and message exchanges, CMC can yield the same relational outcomes as face-to-face communication, and under certain conditions – further developed in Walther’s later “hyperpersonal” model [Walther, 1996: 3–43] – CMC can generate more intense relational outcomes than face-to-face interaction because senders can strategically make idealised self-presentations and receivers can selectively attend to positively valenced cues. SIP theory is the essential theoretical anchor for digital paralinguistics, predicting not the disappearance of paralinguistic information but its compensatory re-encoding in whatever channels the medium allows. Users will find the typographic analogues (CAPS, letter repetition, punctuation density) if vocal tone is not available, and they will create or use graphic substitutes (emojis, emoji) if facial expressions are not available. The forty-year empirical record since Walther’s original formulation has confirmed these predictions with remarkable consistency.

Multimodal social semiotics

Gunther Kress and Theo van Leeuwen's *Reading Images: The Grammar of Visual Design* [Kress & van Leeuwen, 2006: 154–177] and *Multimodal Discourse: The Modes and Media of Contemporary Communication* [Kress & van Leeuwen, 2001: 1–23] constitute the second pillar of the theoretical framework for digital paralinguistics. Their main argument is that meaning is always realised through multiple co-deployed semiotic modes—linguistic, visual, gestural, spatial, and aural—and that no single mode, including language, has theoretical or empirical primacy. In their framework, a text message, tweet, Instagram caption, or Telegram post is read simultaneously across the modes of writing (lexical content), image (emoji, stickers, attached photos), typography (font choice, capitalisation, spacing), layout (line breaks, alignment), and time (message sequencing, response latency). The paralinguistic load of digital discourse is distributed across all available modes rather than concentrated in a single “paralinguistic track,” as it is in speech, where paralanguage co-occurs with yet remains separable from lexical content. This multimodal distribution makes the classical verbal/nonverbal binary inadequate for analysing digital communication: “okay.” (with a terminal period), “okay!!” (with double exclamation marks), and “okay 😊” (with a smiling emoji) express three different illocutionary forces and affective stances through the coordinated use of lexis, punctuation, and iconography. The paralinguistic signal is not added to the verbal message but is intrinsically woven into its multimodal realisation.

The semiotics of emoji

The first book-length theoretical treatment of emoji as a semiotic system, rather than as a marginal communicative curiosity, was Marcel Danesi's *The Semiotics of Emoji: The Rise of Visual Language in the Age of the Internet* [Danesi, 2017: 18–40]. Danesi locates emoji in a Peircean triadic setting (icon, index, symbol) and shows that emoji operate as iconic signs (such as the icon of a smiling face, 😊); as indexical signs (such as the index of a smiling face, 😊, which signals the sender's emotional state); and increasingly as symbolic signs (such as the symbolic meanings of emoji, such as politeness-marking or irony-signalling, which are no longer directly derivable from the visual form of the icon). Danesi [Danesi, 2017: 18–40] also applies Jakobson's [Jakobson, 1960: 350–377] six functions of language to the functions of emoji, finding that emoji are mainly used for emotive (expressing the sender's feelings), phatic (maintaining social contact), and conative (influencing the receiver) purposes, with secondary uses for metalingual (commenting on code itself) and poetic (aesthetic and

playful) purposes [Danesi, 2017: 158]. Danesi rejects the popular-press notion of emoji as a “universal language” or a return to hieroglyphic writing. Rather, he argues that emoji are a hybrid, supplementary system that works alongside, rather than in place of, alphabetic text. Further research [Escoufflaire, 2020; Almaguer, et al. 2025: 95–112] has created multi-category functional typologies: expressive, interpretive, referential, relational, politeness-marking, emphatic, structural, and phatic emoji uses. By Emoji 17.0 (9 September 2025), the Unicode Standard has exactly 3,953 emoji [Emojipedia, 2025], a standardised inventory that is unparalleled in the history of paralinguistic signs and is nearing the lexical magnitude of whole natural languages.

The Graphicon framework

In their paper, "Nice Picture Comment! Graphicons in Facebook Comment Threads" [Herring & Dainas, 2017: 2185–2194], Susan C. Herring and Ashley R. Dainas proposed the umbrella term graphicon – a portmanteau of "graphic icon" – to describe emoticons, emoji, stickers, GIFs, images and video clips when used to express propositional or paralinguistic content in message exchanges. Herring and Dainas's key insight is that, regardless of their visual form, all graphicons serve a common set of pragmatic functions in digital discourse. They proposed a taxonomy of six functions: (1) mention (tagging or referencing another user or entity), (2) reaction (expressing an affective or evaluative response to prior content), (3) tone modification (modulating the illocutionary force or affective valence of co-occurring text), (4) action (performing a speech act such as greeting, thanking, or apologising), (5) riff (playful elaboration or intertextual humour), and (6) narrative sequence (contributing to a multi-turn storyline). This taxonomy has been the most widely used framework for CMC pragmatics and emoji analysis in English language literature.

Konrad, Herring, and Choi [Konrad et al., 2020: 217–235] extended this synchronic taxonomy with a diachronic, apparent-time analysis, comparing usage patterns for three graphicon types — emoticons (ASCII-based, e.g., :-)), emoji (Unicode-standardised pictographs), and stickers (large, platform-specific cartoon images) — across age cohorts in a corpus of Facebook Messenger conversations. They found that emoticons have undergone grammaticalisation into punctuation-like markers with lower affective loading. Emojis are on a path of conventionalisation, with high-frequency emojis (😂, ❤️, 😊) acquiring stable pragmatic functions independent of their iconic referents, and stickers occupy the affectively marked, innovation-frontier position typical of early-stage adoption. The

pattern matches classic language change trajectories [Hopper & Traugott, 2003: 1–17] and suggests that digital paralinguistic systems are subject to the same processes of routinisation, semantic bleaching and functional specialisation documented in lexical and grammatical change.

Visual prosody and typographic paralanguage

Gretchen McCulloch, *Because Internet: Understanding the New Rules of Language* [McCulloch, 2019], which synthesised a decade of internet-linguistic scholarship by David Crystal [Crystal, 2006: 52–55], Naomi Baron, and others, devoted a central chapter to “typographical tone of voice,” documenting the systematic ways in which internet users deploy typography to encode the suprasegmental information (intonation, stress, tempo, rhythm, voice quality) that, in speech, is carried by paralanguage. McCulloch identifies the following: (a) capitalisation: CAPS AS SHOUTING or emphasis, all-lowercase as casual/deadpan register; (b) letter repetition: “helloooo” for drawn-out delivery, “omgggg” for intensification; (c) punctuation density: multiple exclamation marks (!!!) for excitement, terminal periods in informal texting as coldness or passive-aggression; (d) spacing: s p a c e d o u t for slow, deliberate delivery; (e) tildes and vowel lengthening: especially prevalent in East Asian internet orthography (好～～, やった～); (f) asterisks and underscores for emphasis: *really* important, _must_ read. These conventions, McCulloch argues, constitute a coherent system of visual prosody: the deliberate manipulation of typographic resources to do the work that, in oral communication, is done by pitch contour, loudness, tempo and voice quality.

Jibril and Abdullah [Jibril & Abdullah, 2024] offer empirical support for this claim through corpus analysis of WhatsApp and Facebook message threads, showing that placement and type of emojis correlate systematically with prosodic functions such as boundary-marking, stress and intonation. Hiraga, Wakuya, and Wada [Hiraga et al., 2020] experimentally validate that readers process timing and visual presentation features of digital text as prosodic via reading time and impression studies. The scholarship presents visual prosody as a genuine functional extension of classical prosody, not as a metaphorical or marginal one.

Mapping classical onto digital: five functional correspondences

The main theoretical argument of this review can be formulated as a hypothesis of systematic re-encoding: all major subsystems of classical paralinguistics have a functional equivalent in digital paralinguistics, so that the work that voice, body and space do in face-to-face interaction for

pragmatic, affective, regulatory and social-indexical purposes is now done by typography, emoji and platform affordances in computer-mediated interaction. Five specific mappings are elaborated in this section.

Mapping 1: Voice qualities – typographic prosody

Trager's [Trager, 1958: 1–12] voice qualities—pitch range, rhythm control, tempo, articulation control, resonance—are echoed in the digital manipulation of typography. Pitch turns into vertical formatting: rising placement or size (getting LOUDER and BIGGER) indicates ascending pitch contours; falling or neutral pitch is the default baseline. Time becomes the repetition of letters and ellipsis: “sooooo good” encodes a drawn-out delivery; “good!!!” encodes rapid-fire enthusiasm; “well...” encodes hesitation or trailing off. Loudness is capitalisation: “I SAID NO” is louder than “I said. No. Rhythm becomes density of punctuation and of line breaks: short, staccato messages (No. Not today. Sorry.) versus flowing, run-on messages (no not today sorry). Such mappings are richly documented empirically in McCulloch [McCulloch, 2019] and Crystal [Crystal, 2006: 52–55]. Experimental evidence that readers process these typographic cues as prosodic comes from Hiraga et al. [Hiraga et al. 2020].

Mapping 2: Vocal characterizers – emoticons, face emoji, and reaction stickers

Trager's [Trager, 1958: 1–12] vocal characterisers (laughing, crying, whispering, yawning, sighing) are re-inscribed as facial emoji and their animated extensions (stickers and GIFs). Laughing becomes 🤣, 😂, or LOL-themed stickers; crying becomes 😭 or 😓; sighing becomes 😮‍💨 (face exhaling); and yawning becomes 🥱. Functional equivalence is based not simply on iconic resemblance but on pragmatic role: 😂 serves the same range of functions in digital discourse as laughter does in speech, indexing amusement, irony, nervousness, or social bonding depending on the context. Dresner and Herring [Dresner & Herring, 2010: 249–268] showed that emoticons are not merely icons of emotion but markers of illocutionary force: “Great idea :-)” and “Great idea. :-|” signal approval and scepticism, respectively, despite their identical verbal content. This is even more true of Unicode emoji, which offer a much richer inventory than ASCII emoticons.

Mapping 3: Vocal segregates — discourse particles, hashtags, and metacommunicative emoji

Digital cognates of Trager's [Trager 1958: 1–12] vocal segregates – “uh-huh,” “shh,” “hm,” clicking sounds – are textisms (“lol,” “omg,” “smh,”

“tbh”), hashtags as metacommentary (#sorrynotsorry, #awkward) and reaction emoji that do the work of turn-management and stance-marking (👁️ eyes for “I’m watching this,” 🤔 thinking face for “skeptical,” 🙅 raised hand for “stop” or “wait”). These elements play the same structural role as vocal segregates: they do not add propositional content, but they regulate the flow of discourse, signal the stance of the speaker and manage turn-taking. Baron [Baron, 2021] contends that hashtags and emoji have assumed some of the metacommunicative functions of punctuation in informal digital writing.

Mapping 4: Kinesics — object/body emoji, GIFs, and stickers

Birdwhistell’s [Birdwhistell, 1970: 257–268] kinesics—gestures, facial expressions, postures, head movements—maps onto object and body emoji, animated GIFs, and platform-specific sticker sets. Emblems (gestures with direct verbal translations) become emoji emblems: 🙌 (OK sign), ✌️ (V—sign for peace or victory), 👏 (applause), 🙏 (prayer/thank you), 🤔 (shrug), 🤦 (facepalm). Illustrators (movements that accompany and reinforce speech) become gesture emoji used in the middle of a sentence: ‘We need to 🤔 focus 🤔 on the main issue’. Regulators (turn-taking signals) are encoded as reaction emoji: ✅ for acknowledgement, ⏸️ for “pause,” ⏩ for “skip this topic.” Affect displays (facial expressions of emotion) are the core domain of face emoji (😊 😐 😏 😬 😡 😭 😘) as discussed in Mapping 2. Full-body kinemes are encoded in GIFs and stickers that depict postures, dance moves, and culturally-loaded action sequences (bowing, high-fiving, thumbs-up). Specifically, Konrad et al. [Konrad et al., 2020: 217–235] discovered that stickers have taken over the rich affective bandwidth that was once the sole domain of kinesic display, due to their large size, cultural specificity, and platform-bound nature that enable them to convey nuanced relational and identity information.

Mapping 5: Proxemics and chronemics — response latency, co-presence markers, and platform affordances

Hall’s [Hall, 1966: 116–125] proxemics and chronemics—spatial positioning, interpersonal distance, timing, and rhythm—have digital equivalents in response latency (the time between sending a message and receiving a reply), co-presence indicators (the “typing...” indicator, “last seen” status, and read receipts), and platform choice (synchronous platforms such as Telegram versus asynchronous platforms such as email). The visible “typing...” indicator offers a digital equivalent of Hall’s intimate zone: it tells the recipient in real time that the sender is composing

a reply, creating a sense of co-presence and immediacy. Conversely, the absence of such indicators or the use of an asynchronous platform may signal greater interpersonal distance. Response latency is a form of digital chronemics. In high-context cultures, where silence and timing carry substantial meaning, the speed of a reply is interpreted as relational information. One digital transposition of East Asian high-context communication is the systematic use of response timing as a face-saving strategy: East Asian participants delayed their replies in face-threatening scenarios [Togans et al., 2021: 277–288]. Hall first documented the underlying cultural patterns in the 1960s.

Cross-cultural digital paralinguistics: Matsumoto's display rules in the emoji age

If Matsumoto's [Matsumoto et al., 2008: 55–74] cultural display rules dictate when, how intensely, and to whom emotions may be facially expressed in face-to-face interaction, digital display rules—to extend the construct—dictate when, how, and to whom emoji, stickers, and visual prosody may be deployed in computer-mediated interaction. This very extension has been operationalised in the last five years of cross-cultural digital paralinguistics literature.

Togans, Holtgraves, Kwon, and Morales Zelaya [Togans et al., 2021: 277–288] conducted three experiments comparing the use of emoticons and emoji in face-threatening scenarios (delivering criticism, declining an invitation, expressing disagreement) by American and South Korean participants. They found that South Korean participants used significantly more situationally-congruent paralinguistic cues (i.e., apologetic emoji when declining, mitigating emoticons when criticising) than American participants, especially in in-group contexts. This pattern is consistent with the offline finding by Matsumoto et al. [Matsumoto et al., 2008: 55–74] that collectivist cultures promote more emotional regulation and relational sensitivity in in-group interactions. Togans et al. [Togans et al., 2021: 277–288] interpret their findings to suggest digital display rules: South Korean participants are not just “using more emoji” but are adhering to culturally learned norms about when emoji use is appropriate, which emoji express appropriate affect, and how emoji density should vary according to recipient and context.

Hu, Lee, Hong, and Bok [Hu et al., 2022: 245–263] studied emoji interpretation in a sample of 369 U.S. college students exposed to Korean emoji (from the KakaoTalk platform). They assessed participants' individualism-collectivism orientation, intercultural communication

competence, and emotional intelligence, and tested their ability to accurately interpret the intended emotional valence of ambiguous emoji. Results indicated that collectivism orientation was associated with greater accuracy in interpreting collectivism-congruent emoji (e.g., group-oriented, context-sensitive emoji), and individualism was associated with accuracy for individualism-congruent emoji. Both intercultural communication competence and emotional intelligence were important moderators that buffered the effect of cultural orientation. This study shows that emoji are not “universal” in their interpretation: their meaning is systematically moderated by the same cultural dimensions that moderate emotional expression in face-to-face interactions.

Almaguer, Felix, and Harmeling [Almaguer et al., 2025: 95–112] developed a formal theory of brand paralinguistics, arguing that marketers’ strategic use of emoji in advertising and customer communication constitutes a new domain of nonverbal brand signalling. They propose a 2 × 2 matrix combining emoji use (symbolic versus iconic) with emoji form (text-supplemented versus standalone) and demonstrate empirically that these dimensions interact with marketer-consumer group relatedness (in-group versus out-group) to influence perceived message clarity and intimacy. Iconic emoji use (e.g., 😊 to indicate happiness) in text-supported contexts (“We’re happy to help! 😊”) increases perceived intimacy among in-group consumers. Symbolic emoji use (e.g., 100 to indicate perfection, a conventionalised meaning) in standalone contexts (“100”) decreases perceived clarity among out-group consumers. This pattern parallels the in-group/out-group asymmetries that Matsumoto found in facial expressions: display rules are stricter and more elaborate for in-group members because the relational stakes are higher.

As an example, Petersen, Choi, and Li [Petersen et al., 2023] find that the same emoji glyph (🙏 folded hands) was interpreted as “prayer” by U.S. participants and “thank you” or “please” by Korean participants, exemplifying culturally specific gestural codes: the praying-hands gesture is religious in Western contexts but is a polite bow-analogue in East Asian contexts. This finding supports Birdwhistell’s [Birdwhistell, 1970: 257–268] assertion that kinesic codes are culturally variable, now translated to the emoji realm.

Russian-language and Uzbek contributions to digital paralinguistics

The Russian-language scholarly tradition of digital paralinguistics has developed rapidly since 2019. This body of work overlaps significantly with, yet remains theoretically independent of, the Anglophone literature. It

draws on the linguocultural and emotiological paradigms introduced by Kolshanskii [Kolshanskii, 1974/2014: 7] and Kreidlin [Kreidlin, 2002] and interprets emoji and emoticons as a new paralinguistic code (*novyi paralingvisticheskii kod*) or, more recently, as graphic emotiology (*graficheskaiia emotiologiia*) in virtual space.

Karabulatova et al. [Karabulatova et al., 2023: 818–840] compared the distribution of the emoticeme SURPRISE, operationalised through surprise-related emoji and emoticons, in news discourse in Russia, Armenia, Kazakhstan, and China. They identified systematic culturally conditioned patterns: Russian news media used surprise emoticons ironically and critically, reflecting a low-trust media environment; Armenian media used them emphatically, reflecting a highly emotional rhetorical style; Kazakh media used them sparingly, reflecting formal-register norms; and Chinese media used them frequently but in stereotyped positions, reflecting formulaic discourse conventions. This cross-cultural, cross-platform study demonstrates that emoticons and emoji are not neutral encodings of emotion but culturally coded resources deployed in accordance with genre, platform, and national communication norms.

According to Ivanova-Yakushko, Anumyan, and Karabulatov [Ivanova-Yakushko et al., 2024: 296–308], emoticons are the most important manifestation of graphic emotiology in computer-mediated discourse. Drawing on Shakhovsky's school of emotiology, they argue that emoticons do not merely “add emotion” to neutral text but contribute to the emotive meaning of the message: the sentence Молодец (Well done) may have a neutral or ironic valence without graphical markers but becomes unambiguously positive when followed by 👍 or 😊. Emoticons are therefore obligatory emotive markers in genres such as congratulations, condolences, and apologies, in which affect must be explicitly signalled.

Kosmarskaya [Kosmarskaya, 2021: 110–121] investigated emoji and emoticons as structural elements of written language mediated by the internet, asserting that they have undergone grammaticalisation and become obligatory constituents in some syntactic positions (e.g., sentence-final position in informal messaging). Kosmarskaya's analysis is similar to the Anglophone finding of Konrad et al. [Konrad et al., 2020: 217–235] that emoticons are grammaticalised.

Kol'tsova and Kartashkova [Kol'tsova & Kartashkova, 2022: 699–720] apply Kress and van Leeuwen's multimodal framework to Russian-language WhatsApp and Telegram discourse. They show that emoji simultaneously fulfil multiple semiotic functions—as elements of ideational content, interpersonal stance markers, and textual cohesion

devices—and should therefore be understood as integral parts of multimodal utterances rather than merely as decorations added to verbal text.

Uzbek scholarship in Foreign Languages in Uzbekistan

During the period 2023–2025, the journal *Foreign Languages in Uzbekistan* (Tashkent: Uzbekistan State World Languages University; ISSN 2181-8215; founded by the Ministry of Higher Education, Science and Innovations of the Republic of Uzbekistan, the Ministry of Preschool and School Education; the Ministry of Digital Technologies; and Uzbekistan State World Languages University) published a series of articles which connect directly with the matters of the present review.

Khursanov [Khursanov, 2024: 17–27] studied the verbal/nonverbal interface in Uzbek and English literary discourse, providing a useful basis for applying paralinguistic analysis to digital discourse as well as to drama. Khursanov's finding that nonverbal means (stage directions, paralinguistic descriptions, and kinesic cues) account for approximately 18–22% of the total semiotic content in both Uzbek and English dramatic texts suggests a baseline ratio that may be applicable to digital multimodal messages, in which emoji and graphicons similarly constitute 15–25% of the total message content in informal genres [Konrad et al., 2020: 217–235].

Odilova's article "The Cultural and Social Relevance of Polycode Texts" [Odilova, 2024: 92–106] theorises polycode (*mnogokodovye*) texts—texts that combine verbal and visual codes in a single communicative act—within a linguocultural framework. Her analysis is directly relevant to digital messages containing graphicons, which are prototypical polycode texts. Her emphasis on the cultural and social indexicality of switching between verbal and visual modes aligns with Matsumoto's display-rule framework: the decision to use visual codes (emoji) rather than verbal codes (text alone) is culturally patterned and socially consequential.

Petrosyants [Petrosyants, 2025: 141–161] maps morphological innovation in digital media, noting the appearance of new lexemes through blending, clipping, and affixation in Uzbek-language social media. Petrosyants's inventory contains emoji-derived coinages (e.g., Russian-language "смайлить" [to smile/to send a smiley] and "лайкать" [to like] and Uzbek-language adaptations of platform-specific terms), which reveal the deep integration of digital paralinguistic elements into the morphosyntactic system of natural language.

Directly relevant to the cross-cultural part of the current review is a comparative emoji study by Bai [Bai, 2023: 69–86]. Bai analyses the

frequency of emoji use, the distribution of pragmatic functions, and the platform-specific norms of usage in Russian-language VKontakte discourse compared to Chinese-language WeChat discourse and finds that Russian users use emoji more often for phatic and ironic functions, while Chinese users use emoji more often for politeness-marking and relational-maintenance functions—a pattern that aligns with the individualism-collectivism axis documented by Matsumoto [Matsumoto et al., 2008: 55–74] and Hu et al. [Hu et al., 2022: 245–263].

Dzhusupov [Dzhusupov, 2025: 63–72] proposes a frame-semantic apparatus, drawing on the Fillmorean and Lakoffian traditions, that can be applied directly to multimodal interpretation. Emoji are frame-evoking elements that activate interpretative schemes: “I’m fine 😊” activates a positive-affect frame, whereas “I’m fine. 😏” invokes a frame of irony or scepticism.

Abdullayev [Abdullayev, 2025: 7–18] applies pragma-linguistic analysis to institutional discourse, offering a methodological framework for future research on emoji and graphicons in institutional digital communication (e.g., how do Uzbek government bodies, educational institutions, or businesses use emoji in official Telegram channels?).

At the level of basic Uzbek-language linguistic theory, Safarov’s Pragmalingvistika [Safarov, 2008] and Kognitiv tilshunoslik [Safarov 2006: 70] provide the local pragmatic and cognitive-linguistic foundation for Uzbek discourse analysis, including the study of paralinguistics. Safarov’s [Safarov 2008] model of pragmalinguistics, based on the theories of Austin, Searle, Grice, and Leech but adapted to Uzbek communicative norms, provides a conceptual framework for analysing illocutionary force, politeness strategies, and context dependence, all of which are essential to understanding the effects of emoji and graphicons in Uzbek-language digital discourse.

Critical synthesis: continuity, discontinuity, and asymmetry

Thesis 1: Functional continuity

Digital paralinguistics is functionally continuous with classical paralinguistics. The six main functions identified in the literature from 1950 to 2010 have been successfully re-encoded in the digital channel: affective expression, illocutionary force modulation, turn management, stance marking, in-group signalling, and cultural-display regulation. This continuity makes the older theoretical apparatus — Trager, Birdwhistell, Hall, Ekman, Mehrabian, Matsumoto, Kolshanskii, and Kreidlin —

productive rather than obsolete. Emoji are facial expressions rendered graphically. Typographic prosody (capitalisation, letter repetition, punctuation density) is vocal prosody realised graphically. Graphics are kinesic emblems realised digitally. The novelty lies not in the communicative functions performed but in the semiotic resources used to perform them. This claim of continuity is formalised in the five mappings detailed in Section 4: for every classical paralinguistic subsystem (voice qualities, vocal characterisers, vocal segregates, kinesics, and proxemics), there is a digital functional counterpart (typographic prosody, emoji, discourse particles, GIFs and stickers, and response timing) that performs the same pragmatic, affective, and relational work.

Thesis 2: Structural discontinuity

Three properties distinguish digital from classical paralinguistics and necessitate new theoretical tools. First, standardization: emoji are Unicode-encoded — 3,953 of them as of Emoji 17.0 [Emojipedia, 2025] — and globally regulated by the Unicode Consortium, which renders them more "phonemic-like" than any classical paralinguistic resource. Facial expressions, gestures, and vocal tones are gradient, continuous, and infinitely variable; emoji are discrete, enumerable, and standardized. This discreteness enables corpus-linguistic analysis (frequency counts, distribution patterns, co-occurrence networks) in ways that were never feasible for classical paralinguistics. Second, persistence: digital paralinguistic acts are stored, searchable, and citable in a manner that ephemeral vocal and bodily acts are not. A laugh in conversation disappears the moment it is produced; a 😂 emoji in a WhatsApp thread is permanently archived and algorithmically retrievable. This persistence creates new pragmatic affordances (emoji can be quoted, screenshot, recontextualized) and new social risks (emoji cannot be retracted or denied). Third, cross-platform variance: an emoji glyph that renders as a smile on one platform may render as a smirk or grimace on another, generating a new class of intersemiotic miscommunication unknown to classical paralinguistics. Miller et al. [Miller et al., 2016: 259–268] demonstrated that the "grinning face with smiling eyes" emoji (😊) is interpreted as positive on iOS and Android but as negative or aggressive on Microsoft and Samsung platforms, leading to systematic misunderstandings in cross-platform exchanges. This platform-dependence has no analogue in face-to-face paralinguistics, where a smile is visually stable across observers.

Thesis 3: Asymmetric re-encoding

The transition from oral to digital paralinguistics has been asymmetric across the classical subsystems. Vocalics and facial expression have been re-encoded most successfully: typographic prosody provides robust functional substitutes for pitch, tempo, and loudness, while facial emoji provide robust functional substitutes for affective facial displays. The empirical literature discussed in Sections 4 and 5 shows that, under certain conditions, these substitutions can exceed the expressive potential of face-to-face channels because emoji can convey nuance, irony, and intertextual layering unavailable to spontaneous facial expressions. Kinesic emblems such as the OK sign, V-sign, applause, and shrug have been readily re-encoded as hand and body emoji (👌, ✌️, 🙌, 🙏). Proxemics has been only partially re-encoded: response latency and platform affordances provide some functional substitutes for interpersonal distance and chronemics, but the full richness of Hall's [Hall, 1966: 116–125] proxemic zones — particularly the tactile, olfactory, and thermal dimensions of intimate distance — remains uncoded. Haptics has been re-encoded only minimally. Although haptic feedback, such as vibration patterns, has proliferated in mobile devices, the deep socio-emotional functions of touch documented by Hertenstein, Keltner, App, Bulleit, and Jaskolka [Hertenstein et al., 2006: 528–533] have no digital analogues. Olfactory and gustatory paralinguistics (Kreidlin's *ol'faktika* and *gastika*) have not migrated at all, and their migration is not foreseeable in the near term given current technology. This asymmetry means that digital paralinguistics is a proper subset of classical paralinguistics rather than its functional equivalent: some paralinguistic information can be re-encoded digitally, whereas other information is irretrievably lost in the transition from oral to digital communication.

Methodological and practical implications

The synthesis leads to four research programmes directly for Uzbek scholars and graduate students working at the intersection of linguistics, intercultural communication and digital discourse.

Firstly, corpus-based comparative studies of emoji and graphicon use in the Uzbek-language Telegram, Instagram, YouTube comment sections, and TikTok could expand the empirical base established by Khursanov [Khursanov, 2024: 17–27] and Bai [Bai, 2023: 69–86]. A minimum corpus of 10,000 naturally occurring messages annotated for the six pragmatic functions of Herring and Dainas [Herring & Dainas, 2017: 2185–2194] would allow for quantitative analysis of the frequency, distribution, and co-occurrence patterns of emoji and would enable cross-linguistic comparisons with Russian-language and English-language corpora.

Second, linguocultural-pragmatic studies of digital politeness strategies in Uzbek-Russian-English trilingual digital communities could operationalise Safarov's [Safarov, 2008] pragmalinguistic framework for the digital domain. Possible research questions could be: How do Uzbek speakers use emoji to modulate politeness when code-switching between Uzbek, Russian and English within a single message thread? Are emoji politeness norms language-specific or do they transfer across languages, triggering different display rules? How does platform choice (Telegram, Instagram, Facebook) interact with language choice and emoji usage?

Third, educational research on the integration of digital paralinguistic literacy into foreign-language teaching is well aligned with Foreign Languages in Uzbekistan's stated mission of advancing foreign-language methodology. Examples of empirical questions are: Can Uzbek EFL learners correctly interpret the illocutionary force of emoji in authentic English-language digital discourse? Can teaching of emoji pragmatics improve learners' communicative competence in informal digital genres? What are the transfer effects of L1 (Uzbek) and L2 (English) emoji usage norms?

Fourth, the literature is dominated by East Asian, North American, and European samples, leaving a significant regional gap. Cross-cultural studies of digital display rules using Matsumoto-style instruments adapted for Central Asian respondents would help fill this gap. A Display Rule Assessment Inventory for digital communication, administered to Uzbek, Kazakh, Kyrgyz, and Tajik respondents and compared with Russian and Western baselines, could test whether Central Asian collectivism predicts digital display rules in the same way as East Asian collectivism [Togans et al., 2021: 277–288; Hu et al. 2022: 245–263].

Conclusion

The present theoretical review combines the classical paralinguistic tradition [Trager, 1958: 1–12; Birdwhistell, 1970: 257–268; Hall, 1966: 116–125; Ekman & Friesen, 1969: 49–98; Mehrabian, 1971: 42–47; Matsumoto et al., 2008: 55–74; Kolshanskii, 1974/2014: 7; Kreidlin, 2002] with contemporary digital communication research [Walther, 1992: 52–90; Danesi, 2017: 18–40; Herring & Dainas, 2017: 2185–2194; McCulloch, 2019; Konrad et al., 2020: 217–235; Almaguer et al., 2025: 95–112] to show that digital paralinguistics is not an interruption but a systematic re-encoding of classical paralinguistic systems. The article identifies five functional mappings from oral/face-to-face to written/digital paralinguistic channels: (1) voice qualities → typographic prosody; (2) vocal characterisers → emoticons and face emoji; (3) vocal segregates →

discourse particles and metacommunicative emoji; (4) kinesics → object/body emoji, GIFs, and stickers; (5) proxemics and chronemics → response latency, co-presence markers, and platform affordances. Each mapping indicates how typography, emoji, and digital infrastructure now perform the pragmatic, affective, regulatory, and social-indexical functions that voice, body, and space once performed, with varying degrees of fidelity.

Cross-cultural research on emoji interpretation and use [Togans et al., 2021: 277–288; Hu et al., 2022: 245–263; Almaguer et al., 2025: 95–112] has been shown to operationalise Matsumoto's [Matsumoto et al., 2008: 55–74] cultural display rules for the digital age: individualism-collectivism orientation predicts emoji use in the same way that it predicts the regulation of facial expressions in face-to-face interaction. This confirms that digital paralinguistics is governed by the same culturally learned norms as classical paralinguistics. The review bridges the Anglo-American and Russian-language scholarly traditions by demonstrating the theoretical compatibility of Herring and Dainas's [Herring & Dainas, 2017: 2185–2194] graphicon taxonomy with Kolshanskii's [Kolshanskii, 1974/2014: 7] concept of paralanguage. It also brings recent Uzbek scholarship published in *Foreign Languages in Uzbekistan* [Khursanov, 2024: 17–27; Odilova, 2024: 92–106; Bai, 2023: 69–86; Petrosyants, 2025: 141–161] to the fore as a substantive contribution to this emerging field.

Three basic theses have been advanced. (1) Digital paralinguistics is functionally continuous with classical paralinguistics, doing the same communicative work with new semiotic resources. (2) Digital paralinguistics has structural discontinuities—standardization, persistence, cross-platform variance—that call for new theoretical and methodological tools. (3) The re-encoding from oral to digital has been asymmetric, with vocalics and facial expression re-encoding successfully, with proxemics re-encoding partially, and with haptics, olfactics, and gustics not re-encoding at all.

The implications for future research in the context of Uzbekistan are significant. The theoretical synthesis offered here can be productively extended into corpus-based studies of emoji use in Uzbek-language digital discourse, linguocultural-pragmatic analyses of trilingual (Uzbek-Russian-English) digital communication, educational research into digital paralinguistic literacy in foreign-language pedagogy, and cross-cultural studies of digital display rules in Central Asia. With the communicative ecology of Uzbekistan being digitised at an accelerating pace—with Telegram, Instagram and nascent platforms mediating an ever-greater share

of daily, interpersonal, commercial and civic interaction—the demand for rigorous, theoretically grounded research on digital paralinguistics will only increase. This review has provided the theoretical underpinning and methodological agenda for that research programme.

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