



A COMMON BASIS OF COMPARISON AND PARAMETRIC MODEL OF PARALINGUISTIC PORTRAIT FEATURES

Valentina Sergeyevna Masharipova

PhD researcher

Urgench State University named after Abu Rayhan Biruni

Urgench, Uzbekistan

stanavebber@gmail.com

<https://orcid.org/0000-0002-0248-1499>

<https://doi.org/10.36078/1789029578>

Abstract. The paper tackles the contrastive linguoculturological description of paralinguistic means of the literary portrait, still very insufficiently studied in the context of the English–Russian language pair despite the increasing research into verbalised non-verbal behaviour. The goals of the paper are to establish a universal paralinguistic taxonomy which can be applied as an operational *tertium comparationis*, and to illustrate a parametric model, under which any text or character will be a vector of compositional relative frequencies over parameters of the taxonomy. As the material we use are early twentieth-century social novels A. N. Tolstoy's *Sisters* (1,834 instances annotated for paralinguistic meanings) and J. Galsworthy's *The Man of Property* (1,023 instances), both analysed within a common three-level taxonomy, consisting of two top-level groups, five middle and thirty-six lower-level parameters. The dissimilarity was estimated using the log-likelihood keyness, chi-square with Cramer's V and Pearson residuals, cosine similarity and Jensen–Shannon divergence, and hierarchical clustering. The two portrait profiles are shown to be very similar in general, but reliable differences in their phonetic and auditory or visual and kinesic components are established – the Russian portrait is phonational-auditory and based on voice qualities, whereas the English portrait is visual-kinesic, dominated by body motion and face/eye description. The cluster profiles support the text-bounded selection in Russian/English character portraits. Thus, the *tertium comparationis* is successfully operationalised, and universal and idio-ethnic levels of the portrait description are discriminated.

Keywords: paralinguistic means; literary portrait; common basis of comparison; parametric model; linguoculturology; contrastive analysis; nonverbal semiotics.

QIYOSIY TAHLILNING UMUMIY ASOSI VA PORTRETNING PARALINGVISTIK XUSUSIYATLARI PARAMETRIK MODELI

Valentina Sergeyevna MASHARIPOVA

Doktorant (PhD)

Abu Rayhon Beruniy nomidagi Urganch davlat universiteti

Urganch, O'zbekiston

Annotatsiya. Maqola badiiy portretning paralingvistik vositalarini qiyosiy lingvokulturologik tavsiflashga bag'ishlangan bo'lib, verballashgan noverbal xulq-atvorni o'rganishga qiziqish ortib borayotganiga qaramay, mazkur masala ingliz va rus tillari juftligi kontekstida hamon yetarlicha o'rganilmagan. Ishning maqsadi — operatsional *tertium comparationis* sifatida qo'llanilishi mumkin bo'lgan universal paralingvistik taksonomiyani ishlab chiqish hamda har qanday matn yoki personajni ushbu taksonomiya parametrlari bo'yicha kompozitsion nisbiy chastotalar vektori sifatida ifodalovchi parametrik modelni ko'rsatib berishdan iborat. Tadqiqot materiali sifatida XX asr boshlaridagi ijtimoiy romanlar — A. N. Tolstoyning "Opalar" (paralingvistik ma'nolar uchun 1 834 ta holat annotatsiya qilingan) va J. Golsuorsining "Mulkdor" (1 023 ta holat) asarlari olindi; har ikkala asar ham ikki yuqori darajali guruh (makroguruh), besh o'rta darajali guruh va o'ttiz olti quyi darajali parametrdan tashkil topgan yagona uch bosqichli taksonomiya doirasida tahlil qilindi. Farqlilik darajasi *log-likelihood keyness*, Kramerning V koeffitsiyenti va Pirson qoldiqlari bilan birgalikda xikvadrat mezon, kosinus o'xshashligi, Yensen–Shennon divergensiyasi hamda ierarxik klasterlash yordamida baholandi. Umuman olganda, har ikki portret profili juda o'xshash ekanligi aniqlandi, biroq ularning fonetik-audial va vizual-kinesik komponentlarida statistik jihatdan ahamiyatli farqlar mavjudligi belgilandi: ruscha portret asosan fonatsion-audial xarakterga ega bo'lib, ovoz sifatlariga tayanadi, inglizcha portret esa vizual-kinesik bo'lib, unda asosan tana harakatlari hamda yuz va ko'z tasvirlari ustunlik qiladi. Klaster profillari rus va ingliz tillaridagi personaj portretlarida paralingvistik vositalar tanlovining matn bilan chegaralanganligini tasdiqlaydi. Shunday qilib, *tertium comparationis* muvaffaqiyatli operatsionallashtirildi va portret tavsifining universal hamda idioetnik darajalarini farqlash imkoniyati yaratildi.

Kalit so'zlar: paralingvistik vositalar; badiiy portret; qiyosiy tahlilning umumiy asosi; parametrik model; lingvokulturologiya; qiyosiy tahlil; noverbal semiotika.

Introduction

Modern linguistics exists within the anthropocentric paradigm, with a focus on the human as a language personality, research into communicative behaviour, national-cultural worldviews, etc. These prospects are responsible for the convergence of the following interrelated disciplines: paralinguistics and nonverbal semiotics, linguoculturology, and contrastive linguistics, all of which study language in its relationship with extralinguistic reality. The methodology of contrastive studies in a new aspect has been topicalised: it is interpreted as an instrument to separate the universal and the idioethnic in language [Bayiha, 2023; Kostova, 2022]; the object and the apparatus of linguoculturology have been revised: it is interpreted as the study of language with priority reconstruction of cultural dominants behind language units. The intersection point is especially fruitful with regard to the literary portrait, for the choice of a character's bodily, vocal, and behavioural features made by an author is at the same

time an aesthetic, a characterological, and a national-cultural choice. The verbalisation of nonverbal semiotics in the literary text has recently received increased attention.

Contrastive and linguocultural studies of nonverbal means have mostly been conducted on material from live speech, film and journalism, while the literary text, where paralinguistic behaviour is particularly densely culturally and nationally marked, has only been studied fragmentarily, and rarely in the English-Russian pair for the portrait. Most importantly, such studies are rarely based on a commonality of the object of comparison. Theorising in contrastive linguistics has maintained for over half a century that any contrastive analysis is predicated on the commonality of the object against which two languages are compared; however, in studies of verbalised nonverbal behaviour it is often missing, or at best implied and not operationalised, and quantitative results are reported without reference to corpus size or the compositional nature of the data. The gist of the present study is that the platform for comparison can be interpreted as a common, hierarchy-based taxonomy of paralinguistic means, which can, in turn, be operationalised as a parametric approach in which every text and every character is a vector of compositional relative frequencies over the taxonomy. This enables the separation of the common from the idioethnic in the description of literary portraits, and the linguoculturological interpretation of the latter.

The aim of the article is to validate the commonality of the paralinguistic portrait taxonomy as the tertium comparationis, or common platform for comparison, in contrastive linguoculturological description of the portrait, and to demonstrate a parametric model for quantifying and interpreting cross-linguistic divergence based on that platform. Objectives: (1) to define the grid of comparison (top groups, middle groups, parameters) common for the two corpora; (2) to construct the parametric profiles of the two corpora on a compositional basis at all three levels; (3) to pinpoint, by inferential and keyness statistics, those parameters which distinguish the two literary cultures; and (4) to interpret the asymmetries in a linguocultural light. The material consists of two novels of the early twentieth century, A. N. Tolstoy's *Sisters* and J. Galsworthy's *The Man of Property*, from which 1,834 and 1,023 paralinguistic portraits, respectively, have been extracted and annotated on a common grid. The novelty of the research consists in treating the taxonomy as the tertium comparationis, commonality of the object of comparison, and in applying a vector-based parametric approach, with log-likelihood keyness, effect sizes, and profile-distance/clustering measures, to the contrastive linguoculturological study of the literary portrait.

Theoretical framework

Paralinguistics and nonverbal semiotics. The research of paralinguistic means builds on a strong tradition. In Russian scholarship it was set in motion by G. V. Kolshansky, T. M. Nikolaeva, B. A. Uspensky [Nikolaeva & Uspensky, 1966], who established the principles for the description of paraverbal resources and their relationship with the language system; later G. E. Kreydlin consolidated the discipline of nonverbal semiotics, which distinguishes kinesics, oculesics, proxemics, haptics, gastics, olfaction, chronemics, paralinguistics and systemology. In the Western tradition, important input was R. Birdwhistell's kinesics, A. Kendon and D. McNeill's gesture research, P. Ekman's universal facial affect theory, F. Poyatos's communicative systematisation of nonverbal means, and the Tragerian notion of vocal characterizers: laughter, weeping, sobbing, sighing [Birdwhistell, 1970; Kendon, 2004; McNeill, 1992; Ekman & Friesen, 1971; Poyatos, 1993; Trager, 1958].

Recent theorising encourages a systems-based view of these signs, rather than reducing them to isolated cues [Patterson et al., 2023]. In the present research the taxonomy is consistently maintained to comprise two top groups, paraphonational and parakinesic means, and each of these is subdivided into segmental and suprasegmental (paraprosodic) vs. mimic, gestural and body movement; this subdivision, and especially the attention to segmental and suprasegmental organisation of paraphonational means, is supported by recent theorising about the typology of paralinguistic means in a cross-linguocultural aspect [Abduazizova, 2023], in particular by reference to emotional interjections and sounds in protagonists in onomatopoeia in literary texts, the paraphonational portrayal of emotional states, and the functional role of phonetic stylistic devices [Surmilova, 2025].

Linguoculturology and cultural dominants. The linguoculturological level of analysis turned the linguists to the task of determining the national and cultural markedness and reconstructing the cultural dominants manifested in linguistic units. Its conceptual apparatus has been developed by V. A. Maslova, and has been applied in the cross-culturally in the typologies of A. Wierzbicka, E. Hall, G. Hofstede [Wierzbicka, 1992; Hall, 1976; Hofstede, 2001]. Therefore, differences can be interpreted as manifestations of different cultural typologies; in particular, the cultures in question can be related to E. Hall's distinction between high- and low-context cultures [Hall, 1976]. In the past few years, the object, principles, and method of linguoculturology have been restated; the notion of a nation's cultural code has been theorised; and methodology in the sphere of teaching has been codified.

If we turn to paralinguistic means, this apparatus implies that the description must not stop at listing units, but reconstructing the underlying cultural preferences which play out in their selection and quantitative distribution, since, in the portrait, paralinguistic components encode a particularly high degree of national and cultural information and represent an idioethnic realization of the cultural worldview.

The contrastive method and the common basis of comparison

Contrastive linguistics construes comparison as a tool for distinguishing what is universal in languages from what is idioethnic, and, following reappraisals of the field's conceptual map [Bayiha, 2023], its fruitfulness for analysing discourse has recently been reaffirmed [Kostova, 2022]. A basic tenet of the methodology is that every comparison implies a *tertium comparationis* [Krzeszowski, 1990], that is, a common platform, external to both languages, on which to place the two being compared. Yet, in studies of verbalised nonverbal behaviour, this platform is usually left unstated and quantitative observations are made without a common unit or control for differences in corpus size.

The platform is made explicit by creating the hierarchically structured paralinguistic taxonomy itself as the *tertium comparationis*; since this taxonomy has been used to describe both corpora, the two literary cultures are commensurable at every level. Any differences can be located within a shared coordinate system rather than asserted subjectively.

The parametric model. Using the TC requires a representation in which texts can be compared as a whole. Here, we use 'parametric' in the componential sense, namely that each taxonomic category is a parameter and each unit of comparison (at the scale of a corpus or an individual character) is represented as a vector of compositional relative frequencies, the percentage of each parameter within its paralinguistic repertoire. This latter aspect is familiar from recent quantitative and feature-oriented stylistics: in scholar's characterisation of literary character embodiment at scale [Piper, 2023], in their quantification of depicted body language as distributional corpus patterns [Čermáková & Mahlberg, 2022], and in their semantic component or lexical field analysis of particular behaviours like laughter and smiling [Gironzetti et al., 2023; Ruch, Wagner & Hofmann, 2023; Wood, Sievert & Martin, 2022].

It's crucial to consider the compositional nature of the data. The comparison concerns the internal proportions of each inventory, instead of raw counts in corpora of unequal sizes. This explains why, in our study, the vectors allow us to utilise the standard tools of contrastive corpus linguistics: keyword analysis, effect size, profile distance, and clustering.

The portrait as a linguistic object. It is well-established that the literary portrait is one of the principal devices for constructing the artistic image, and its linguistic study has traditionally concentrated on the verbal portrait, the description of appearance, dress and manner. On the other hand, the paralinguistic components of the portrait (such as facial expression, gesture, oculesic and proxemic signals, vocal qualities and moments of silence) have frequently been treated as optional supplements to the verbal portrait. By contrast, current research, increasingly foregrounds them. The lexical explication of a character's portrait and the construction of the speech portrait have been described for English and Russian fiction, including in translation, and silence has been analysed as a meaningful communicative and characterological resource.

Consolidating these approaches, the present study treats the portrait not as an ornamental layer but as a structured semiotic object that can be decomposed on the shared paralinguistic taxonomy and represented parametrically, so that the universal core of literary portraiture and its idioethnic, culturally specific patterning become, at once, measurable and interpretable.

Material and methodology

Material. Our study is based on two panoramic social novels of the early twentieth century that are comparable in genre, scale and period. The Russian corpus is A. N. Tolstoy's *Sisters* (Systry) and the English one is John Galsworthy's *The Man of Property*. Each work is a large, character-dense narrative built around a social milieu, which makes the two comparable as objects of portraiture. From the two novels, 1,834 paralinguistic instances were extracted for the Russian corpus and 1,023 for the English corpus, where an instance is a verbalized paralinguistic detail, a fragment of the text depicting a vocal, mimic, gestural, bodily or proxemic feature, attributed to a character. Because the primary literary texts are works of fiction, they are recorded separately as sources of language material rather than in the scholarly bibliography.

Extraction, annotation and the common basis of comparison. Every extracted instance was assigned to exactly one parameter of a single, hierarchically organised taxonomy and thereby to one middle group and one top group (*Table 1*). The taxonomy comprises two top groups – paraphonetic and parakinesic means; five middle groups – segmental and suprasegmental (paraprosodic) means under the paraphonetic; facial expressions, gestures and body movements under the parakinesic; thirty-six parameters (such as vocalization, emotional timbre, pausation, hesitations and interjectional exclamations; eye, brow and lip movement, smile and facial-eye expression; etiquette, evaluative, emotional and inner-state

gestures; torso position, head position, posture, gait and proxemic distance).

This is the only grid which functions as tertium comparationis, providing a set of parameters along which the two corpora can be compared at all hierarchical levels since the same parameters are used for both languages. It was only possible to pinpoint differences within a common coordinate system. All classifications were justified by explicit methodological principles, and validated individually. It was indicated if a classification was borderline, and therefore could not be unambiguously resolved by the adopted methodology.

In order to allow a precise comparison between the two databases, the raw annotations were first normalized onto the canonical grid prior to the analysis. Free-text category labels were normalized onto the canonical top, middle and parameter classes. Concurrently, the detailed parameters of the English scheme were merged into the joint parameter list). Character names were similarly standardised: distinct referents were preserved while varying forms of the same referent – e.g., cases where a Forsyte was mentioned both by surname and without it, and not in contrast to other Forsytes – were equated.

The parametric model and compositional normalization. This tertium comparationis is implemented through a parametric data representation, in which each entity (character or corpus) is described as a vector of taxonomic parameters. The corpus profile is a vector of relative frequencies across parameters (and, by aggregation, across the 5 middle groups and 2 top groups); each of the sixteen characters with at least 25 instances by a similar vector. It is important to note that the unit of frequency here is the paralinguistic instance, not the word: N is the number of extracted instances in the corpus. Relative frequencies are thus compositional: each value represents the contribution of the parameter to the paralinguistic structure of the corpus. This is an appropriate baseline for comparing corpora of different sizes, as it describes their internal structure; token-based normalisation (per 1000 words) would require word counts in the source texts, which our corpus data do not contain. All similarity, keyword and clustering measures discussed below operate on these compositional vectors.

Statistical procedures. We investigated the cross-linguistic variation by the use of four mutually dependent procedures: 1. For each level of the taxonomy and for every parameter, we calculated the G^2 keyness log-likelihood statistic [Dunning, 1993] by comparing its frequency across the two corpora to its expected frequency according to the total number of extracted instances. These statistics were compared to the critical values

3.84 ($p < 0.05$), 6.63 ($p < 0.01$), 10.83 ($p < 0.001$) and 15.13 ($p < 0.0001$) and the extent and nature of each divergence was described by a log-ratio measure of effect size [Hardie, 2014].

Furthermore, using the chi-square statistic, the relationship between parameter distribution and corpus was examined at both the middle-group and parameter levels on the parameter-by-corpus contingency table; Cramér's V is reported as an effect size, and standardised (Pearson) residuals were checked to locate the cells that drive the divergence. To calculate the overall similarity of the corpus profiles, we computed separate cosine similarity and Jensen-Shannon divergence of the relative frequency vectors taken at the parameter-group and middle-group levels. These operations thereby isolate the common, universal center of the two portraiture systems from their idioethnic patterning, and locate the particular parameters in which the two literary cultures differ.

Results

The shared taxonomy on which the comparison was based appears in Table 1. The same two top-level groups, five middle-level groups and thirty-six parameters were applied to both corpora, accounting for 1,834 classified instances in *Sisters* and 1,023 in *The Man of Property*.

Table 1

The shared paralinguistic taxonomy (common basis of comparison)

Top group	Middle group	Representative parameters
Paraphonetic	Segmental	interjectional exclamations; onomatopoeia; sound lengthening; phonetic/phonotactic violations
	Suprasegmental (paraprosody)	vocalization; emotional timbre; pausation; hesitations; tempo; melodiousness; rhythm; stress
Parakinesic	Facial expression	eye movement; brow movement; lip movement; smile; facial-eye expression
	Gestures	etiquette; evaluative; emotional; inner- state; deictic; ritual; regulative; threatening gestures
	Body movements	torso position; head position; posture; gait; proxemic distance

At the highest level, we see a different weighting of the two portrait types (Table 2; Figure 1). The Russian corpus spreads its inventory almost equally between paraphonetic (40.7 %) and parakinesic (59.3 %) means, while the English corpus is strongly parakinesic (72.2 % against 27.8 % paraphonetic).

At the middle level, the largest single component of the Russian portrait is suprasegmental paraprosody (34.6 %), realised in fragments such as ‘раздался смех’ [‘laughter rang out’], ‘после очень долгого молчания’ [‘after a very long silence’] and ‘Акундин холодно проговорил’ [‘Akundin said coldly’], while the largest component of the English portrait is facial expression (36.4%), as in ‘the dignity of her calm old face’ and ‘groomed look, an alert, inquisitive assurance, a brilliant respectability’. Body movements occupy a larger share in the English corpus (18.8 % against 13.0%), and gestures and segmental means are comparable across the two.

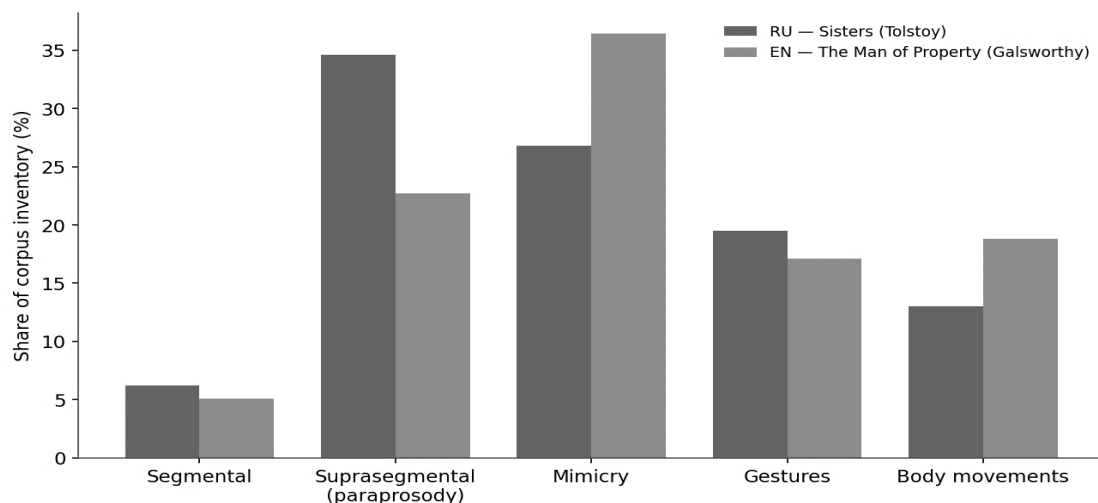
Table 2

Distribution of paralinguistic means in the top and middle groups

Group	RU count	RU %	EN count	EN %
Paraphonetic	747	40.7	284	27.8
Segmental	113	6.2	52	5.1
Suprasegmental (paraprosody)	634	34.6	232	22.7
Parakinesic	1,087	59.3	739	72.2
Facial expression	491	26.8	372	36.4
Gestures	358	19.5	175	17.1
Body movements	238	13.0	192	18.8
Total	1,834	100.0	1,023	100.0

Figure 1

Paralinguistic profile by middle group (compositional %)



The parameters that most strongly differentiate the two corpora are reported in Table 3 and visualised in Figure 2. The single most differentiating parameter is vocalization (laughter, sobbing, sighing), which accounts for 12.65 % of the Russian dataset but only 2.74 % of the English ($LL = 85.53$, $p < 0.0001$), exemplified by Russian *‘раздался смех’* (‘laughter rang out’).

Two further parameters are significantly over-represented in the Russian corpus, emotional gestures ($LL = 10.97$, $p < 0.001$), as in *‘Вельяминов развёл над столом руками’* [*‘Velyaminov spread his hands over the table’*], and melodiousness ($LL = 6.21$, $p < 0.05$), the latter realised seven times in the Russian corpus and not at all in the English; ritual gestures are likewise more frequent in the Russian corpus ($LL = 4.22$, $p < 0.05$).

In the opposite direction, five parameters are significantly over-represented in the English corpus: gait (6.06 % vs 1.91 %; $LL = 31.53$, $p < 0.0001$), as in *‘with his bird-like rapidity’*; facial-eye expression (17.99 % vs 10.09 %; $LL = 30.42$, $p < 0.0001$); posture / bearing ($LL = 6.45$, $p < 0.05$), as in *‘her inflexible back’*; stress / emphasis ($LL = 5.10$, $p < 0.05$); and eye movement (10.07 % vs 7.58 %; $LL = 4.69$, $p < 0.05$), as in *‘Swithin protruded his pale round eyes’*. Three parameters, melodiousness, insulting gestures and warning gestures, are realized only in the Russian corpus and are absent from the English.

Table 3

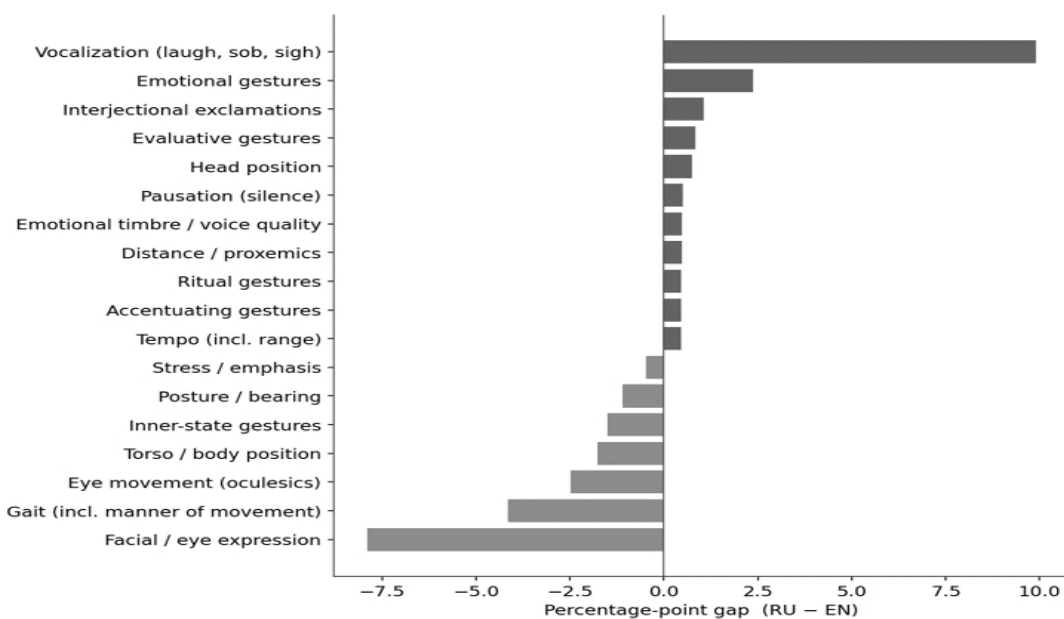
Parameter keyness (RU vs EN): log-likelihood significance

Parameter	RU %	EN %	Log- ratio	LL (G ²)	Sig.	Over- rep. in
-----------	---------	---------	---------------	----------------------	------	------------------

Parameter	RU %	EN %	Log-ratio	LL (G ²)	Sig.	Over-rep. in
Vocalization (laughter, sob, sigh)	12.65	2.74	+2.19	85.53	p<0.0001	RU
Gait (incl. manner of movement)	1.91	6.06	-1.66	31.53	p<0.0001	EN
Facial-eye expression	10.09	17.99	-0.83	30.42	p<0.0001	EN
Emotional gestures	4.53	2.15	+1.05	10.97	p<0.001	RU
Posture / bearing	0.76	1.86	-1.27	6.45	p<0.05	EN
Melodiousness (intonation)	0.38	0.00	+3.06	6.21	p<0.05	RU
Stress / emphasis	0.11	0.59	-2.22	5.10	p<0.05	EN
Eye movement (oculesics)	7.58	10.07	-0.41	4.69	p<0.05	EN
Ritual gestures	0.55	0.10	+1.97	4.22	p<0.05	RU

Figure 2

Most divergent parameters across the shared grid (percentage-point gaps)

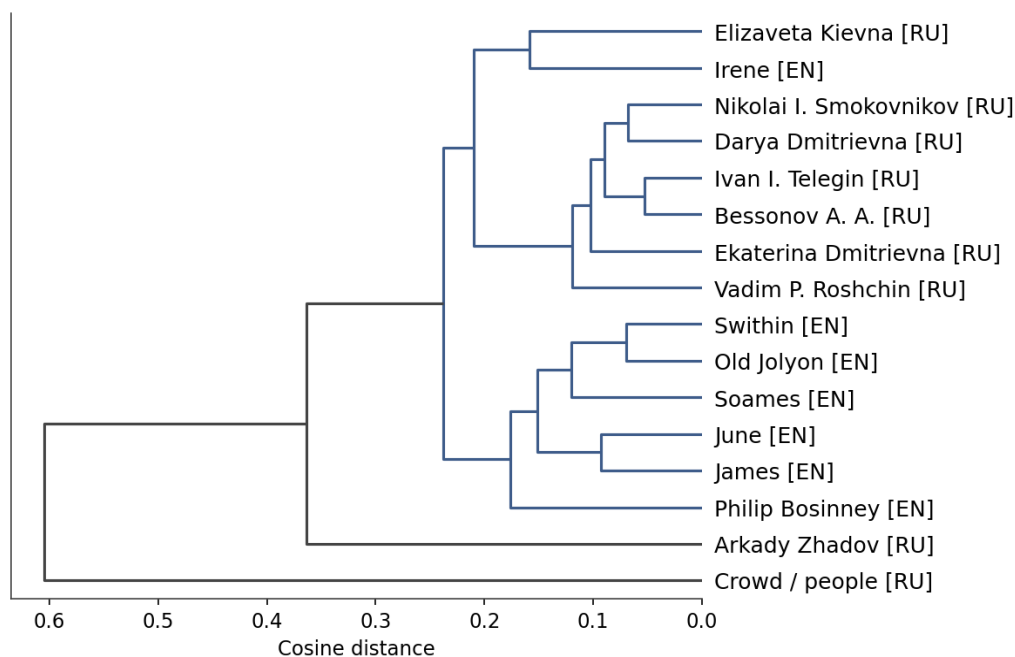


Despite these local divergences, overall the two parametric profiles are highly similar: the cosine similarity of the parameter-level relative-frequency vectors is 0.871, and of the middle-group vectors 0.945, with a Jensen–Shannon distance of 0.246 bits at the parameter level.

Nevertheless, the relationship of the parameter distribution with the corpus is highly statistically significant: the table middle-group-by-corpus subjected to the chi-square test returns $\chi^2(4)=68.64$, $p<1\times10^{-13}$, $V=0.155$; that of parameter-by-corpus returns $\chi^2(35)=199.16$, $p<1\times10^{-24}$, $V=0.264$. In both cases the standardized residuals show that the deviation is essentially generated by those parameters listed in Table 3 that have vocalization on the Russian side, and gait and facial-eye expression on the English side. All sixteen characters that have at least twenty-five instances were represented as a vector over the parameter space and subjected to an average-linkage cluster analysis using the cosine distance (*Figure 3*). Two clusters can be seen to emerge: characters from the Russian source (and among them Darya Dmitrievna, Ekaterina Dmitrievna, Telegin, Bessonov and Smokovnikov) and those from English source (Soames, James, Irene, Old Jolyon, Swithin, June and Bosinney), while marginal, composite characters appear on the branches.

Figure 3

Character clustering on the parametric grid (cosine distance)



Discussion

These facts directly bear upon the main concern of contrastive analysis – the separation of the universal from the idioethnic [Bayiha, 2023; Kostova, 2022]. Two facts have to hold true simultaneously. On the one hand, the two parametric profiles are highly similar as a whole (cosine 0.871 at parameter level, 0.945 at middle-group level): the two novels compose the portrait predominantly with the aid of parakinesic means; in particular they rely heavily on facial-eye expression, and prosodic features at the suprasegmental level and no main category is exclusively specific for either novel. The universal structure of literary portraiture as revealed in the common base of comparison is precisely that overall similarity of the two portraits. On the other hand, the parameter-corpus association is statistically significant with $\chi^2(35)=199.16$, $p<1\times 10^{-24}$, and is localized in the narrow band of parameters (*Table 3*). The idioethnic is concentrated precisely in the narrow band of parameters and only the parametric model permits its teasing out of the universal: the distribution of the divergence allows for identifying two differently nuanced portrayals.

The Russian portrait emphasizes the significance of voice: vocalization emerges as the distinct parameter of this portrait (12.65 % vs 2.74 %; $LL = 85.53$), which is additionally reinforced by emotional timbre, pausation and the marginal but exclusively Russian category of melodiousness. The English portrait gives more importance to visible body features, such as gait, posture and eye movement. Also, facial-eye expression, which is already the largest single English parameter, is more prominent than in Russian. In brief, the data are compatible with a portrait of Tolstoy being predominantly phonational-auditory; of Galsworthy, predominantly visual-kinesic. This is a generalization over the data as interpreted, not a further measurement which is offered as a hypothesis open to falsification on other texts. Within the Russian culture, the acoustic properties of the voice and the vocal-emotional categories carry significance. This supports the beliefs that the Russian-speaking culture is highly emotive, in contrast to English restraint which has been documented earlier on English-Russian (im)politeness and face.

The use of vocalization, specifically laughter, sobbing, sighing, is quite in keeping with recent scholarship which has argued for the need to treat this range of sounds, not as an undifferentiated, universally applicable cue but as a semantically varied, culture-bound field of semantics [Gironzetti et al., 2023; Ruch, Wagner & Hofmann, 2023; Wood, Sievert & Martin, 2022; Azimova, Majidova, 2024] – if laughter and weeping are indeed so semantically dense as is claimed in these papers, their constant verbalization in *Sisters* is one plausible channel for the emotively dense profiling common in the Russian psychological tradition whereby

interiority is sounded out. This tendency to use verbalization of emotional interjections and onomatopoeia in Russian fiction and the use of paraphonational markers of characters' inner states follow the same direction. On the English side, the use of gait, posture, facial-eye expression and eye movement fits with an observational, externalizing mode in the English social realisms whereby character is evinced by appearance and behaviour, as exemplified by Galsworthy's repeated reference to the Forsyte 'sniff', 'inflexible spine' and 'evaluating look'. This emphasis on the visuo-kinetic aspect contrasts with Hall's distinction between high- and low-context cultures, and is connected to recent cognitive and corpus-stylistic approaches about how the body depicted carries meaning: the kinetic organization of literary meaning [Bolens 2021]; the measurable bodily activity of fictional characters; and the distribution of body language patterns depicted in texts. The eye area in particular plays a significant role consistent with oculusics' longstanding characterization as the most expressive channel of inner state's which is realised here in the depiction of gaze and eye behaviour so often.

The greater Russian frequency of ritual gestures and the presence of categories such as warning and insulting gestures which are absent from the English corpus, point to a denser representation of ritualized and etiquette-driven conduct. It falls into a domain in which nonverbal politeness and respect are known to be culturally specific [Djumabaeva & Sarimsakova, 2025; Yusupova, 2025]; and the salience of pausation in the Russian portrait connects to the treatment of silence as a meaningful communicative and characterological resource. The findings extend the contrastive study of verbalized nonverbal behaviour, hitherto largely pursued item-wise across language pairs such as Kazakh-Russian and English-Udmurt. This approach provides an explicit common basis of comparison and a vector-based parametric model that quantifies divergence and tests its reliability.

These findings extend the contrastive study of verbalized non-verbal behavior, where this has previously been explored on an item-by-item basis on pairings such as Kazakh-Russian and English-Udmurt [Imangazina, Pimenova, Develi, 2024; Eshimov, Nurtilieva & Kulmanov, 2022] by providing an explicit, common standard of comparison and a vector-based parametric model which measure divergences and test their validity. They have a translational relevance in that a Russian phonational-emotional portrait can only be rendered in English, and an English visual-kinesic portrait rendered in Russian, with the help of compensating for different parameter sets which is visible in works concerning paralinguistic features and the lexis of emotions under translation [Tangriyev, 2024]. The most significant single methodological finding is that the 16 character portraits are divided by source-text rather than character-type (*Figure 3*): the

parametric profile contains enough signal to mask an individual idiolect. This would be the case if the parametric profile reflected a selection dictated by the cultural lexicon.

There are a number of limitations to these statements. These findings come from only two novels so the cross-linguistic contrast is masked by a contrast between two authors and two works. This problem can only be overcome by using multi-author corpora in order to disentangle the national-cultural features from authorial idiolect and genre.

It is normalization rather than tokenization, suitable for comparing relative item proportions, but not for the density of paralinguistic detail per text unit. The annotation itself, while cross-validated, is based on only one taxonomic system and some borderline cases are left unclassified. Lastly, the linguocultural explanations proposed (i.e., phonational-auditory vs visual-kinesic style and the cultural reason for it) are hypotheses based on the current data and literature and must be verified.

Conclusion

The study demonstrated the possibility of developing a shared paralinguistic taxonomy as a general basis for comparative analysis and showed a parameter-based approach to describing differences in literary portraits across languages. Both objectives were achieved by applying to A.N. Tolstoy's *Sisters* and J.Galsworthy's *The Man of Property* using the same three-level framework, the model indicated that there is a large universal base for the two portraiture systems – they exhibit a high degree of similarity in their compositional structure at each level of the taxonomy – but also differ systematically in a relatively limited number of parameters. The Russian portraiture system has phonational-auditory features – i.e., primarily based upon vocalization and voice, including emotional expression – whereas the English portraiture system has visual-kinesic features – i.e., primarily focused upon gait, posture and facial expressions and gaze. That the character profiles cluster according to source text rather than type of character suggests that such characterization is determined at levels higher than the individual level, which is consistent with a culturally-conditioned norm. The contributions of this study are both descriptive and methodological. From a methodological standpoint, this study demonstrates that a paralinguistic taxonomy may be used as an explicit common basis for comparative analysis, and that representing texts or characters as vectors over the dimensions of the taxonomy, together with statistical methods (log-likelihood keyness, effect size, profile distance) and clustering, allows for a principled and replicable separation of the universal aspects of cultural production from those that are idiosyncratic to particular cultures. Descriptively, this study provides the first quantitative,

parameter-based representation of the paralinguistic features of the literary portrait found in the selected English and Russian novels and determines the parameters which carry the cross-linguistic difference.

Further research should extend the model to balanced, multi-author corpora, in order to disentangle the national-cultural component from authorial idiolect and genre; broaden the comparison to additional language pairs and periods; complement the compositional measure with a token-based normalization where source word counts are available; and pursue the implications of the phonational-auditory versus visual-kinesic asymmetry for literary translation.

The parametric approach, together with its taxonomical framework as a common basis of comparison, is by no means unique for the described pairs of languages, nor for the selected classes of culturally marked items; it is generally applicable for every pair of languages and any class of culturally marked items, thus capable of being used as an instrument of language and linguoculturological comparison in general. However, as paralinguistic competence is a goal of foreign language learning where an activity-oriented, game-based approach has become increasingly popular to keep students motivated, the presented parametric and contrastive analysis can also be useful for teaching non-verbal communication.

Bibliography

- Abduazizova, D. A. (2024). Segmental paraphonetic means. *Central Asian Journal of Literature, Philosophy and Culture*, 5(1), 19–26.
- Azimova, M. J., & Majidova, S. S. (2024). Types of laughter and crying in Uzbek and English: A cross-cultural analysis. *Journal of Discoveries in Applied and Natural Science*, 2(11), 1–5.
- Bayiha, A. (2023). Exploring the conceptual landscape of contrastive linguistics. *Art & Humanities Open Access Journal*, 5(3), 175–179.
- Birdwhistell, R. L. (1970). *Kinesics and context: Essays on body motion communication*. University of Pennsylvania Press.
- Čermáková, A., & Mahlberg, M. (2022). Gendered body language in children's literature over time. *Language and Literature*, 31(1), 11–40.
- Djumabaeva, J. S., & Sarimsakova, S. U. (2025). Expression of Uzbek and English culture: Pragmatic features of nonverbal politeness in selected literary works. *Theory and Practice in Language Studies*, 15(11), 3521–3531.

- Dunning, T. (1993). Accurate methods for the statistics of surprise and coincidence. *Computational Linguistics*, 19(1), 61–74.
- Ekman, P., & Friesen, W. V. (1971). Constants across cultures in the face and emotion. *Journal of Personality and Social Psychology*, 17(2), 124–129.
- Eshimov, M. P., Nurtileuova, S. R., & Kulmanov, S. K. (2022). Non-verbal components of communication: Similarities and differences. *Tiltanym*, (2), 17–27.
- Gironzetti, E., Attardo, S., & Pickering, L. (2023). Semantic components of laughter behavior: A lexical field study of 14 translations of One Flew Over the Cuckoo's Nest. *Humor – International Journal of Humor Research*, 36(1), 95–133.
- Hall, E. T. (1976). *Beyond culture*. Anchor Press/Doubleday.
- Hardie, A. (2014). Log ratio – An informal introduction. ESRC Centre for Corpus Approaches to Social Science. <https://cass.lancs.ac.uk/log-ratio-an-informal-introduction/>
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations* (2nd ed.). Sage.
- Imangazina, M., Pimenova, M., & Develi, H. (2024). Language representation of nonverbal means: Peculiarities of verbalisation in the Kazakh and Russian languages. *Tiltanym*, (2), 111–124.
- Kendon, A. (2004). *Gesture: Visible action as utterance*. Cambridge University Press.
- Kostova, B. (2022). The potential of contrastive analysis in the study of discourse. *Studies in Linguistics, Culture, and FLT*, 10(2), 66–80.
- Krzeszowski, T. P. (1990). *Contrasting languages: The scope of contrastive linguistics*. Mouton de Gruyter.
- McNeill, D. (1992). *Hand and mind: What gestures reveal about thought*. University of Chicago Press.
- Patterson, M. L., Fridlund, A. J., & Crivelli, C. (2023). Four misconceptions about nonverbal communication. *Perspectives on Psychological Science*, 18(6), 1388–1411.
- Piper, A. (2023). What do characters do? The embodied agency of fictional characters. *Journal of Computational Literary Studies*, 2(1), 1–12.
- Poyatos, F. (1993). *Paralanguage: A linguistic and interdisciplinary approach to interactive speech and sound*. John Benjamins.

Ruch, W., Wagner, L., & Hofmann, J. (2023). A lexical approach to laughter classification: Natural language distinguishes six (classes of) formal characteristics. *Current Psychology*, 42, 16234–16246.

Surmilova, E. A. (2025). Phonetic stylistic devices and their functions in English tongue-twisters. *O‘zbekistonda xorijiy tillar*, 11(4), 7–23.

Tangriyev, V. A. (2024). Paralinguistic features in English and Uzbek translations of Paulo Coelho’s *The Alchemist*. *FarDU ilmiy xabarlari*, 30(5), 247–253.

Trager, G. L. (1958). *Paralanguage: A first approximation*. *Studies in Linguistics*, 13, 1–12.

Wierzbicka, A. (1992). *Semantics, culture, and cognition: Universal human concepts in culture-specific configurations*. Oxford University Press.

Wood, A., Sievert, S., & Martin, J. (2022). Semantic similarity of social functional smiles and laughter. *Journal of Nonverbal Behavior*, 46, 399–420.

Yusupova, S. (2025). Paralinguistic expressions of respect in spoken interaction: A cross-cultural study of Uzbek, Japanese, and American English. *International Journal of Multilingualism*. Advance online publication.

Николаева, Т. М., & Успенский, Б. А. (1966). Языкознание и паралингвистика. В *Лингвистические исследования по общей и славянской типологии*. Наука.

References

Abduazizova, D. A. (2024). Segmental paraphonetic means. *Central Asian Journal of Literature, Philosophy and Culture*, 5(1), 19–26.

Azimova, M. J., & Majidova, S. S. (2024). Types of laughter and crying in Uzbek and English: A cross-cultural analysis. *Journal of Discoveries in Applied and Natural Science*, 2(11), 1–5.

Bayiha, A. (2023). Exploring the conceptual landscape of contrastive linguistics. *Art & Humanities Open Access Journal*, 5(3), 175–179.

Birdwhistell, R. L. (1970). *Kinesics and context: Essays on body motion communication*. University of Pennsylvania Press.

Čermáková, A., & Mahlberg, M. (2022). Gendered body language in children’s literature over time. *Language and Literature*, 31(1), 11–40.

- Djumabaeva, J. S., & Sarimsakova, S. U. (2025). Expression of Uzbek and English culture: Pragmatic features of nonverbal politeness in selected literary works. *Theory and Practice in Language Studies*, 15(11), 3521–3531.
- Dunning, T. (1993). Accurate methods for the statistics of surprise and coincidence. *Computational Linguistics*, 19(1), 61–74.
- Ekman, P., & Friesen, W. V. (1971). Constants across cultures in the face and emotion. *Journal of Personality and Social Psychology*, 17(2), 124–129.
- Eshimov, M. P., Nurtileuova, S. R., & Kulmanov, S. K. (2022). Non-verbal components of communication: Similarities and differences. *Tiltanym*, (2), 17–27.
- Gironzetti, E., Attardo, S., & Pickering, L. (2023). Semantic components of laughter behavior: A lexical field study of 14 translations of *One Flew Over the Cuckoo's Nest*. *Humor – International Journal of Humor Research*, 36(1), 95–133.
- Hall, E. T. (1976). *Beyond culture*. Anchor Press/Doubleday.
- Hardie, A. (2014). *Log ratio – An informal introduction*. ESRC Centre for Corpus Approaches to Social Science. <https://cass.lancs.ac.uk/log-ratio-an-informal-introduction/>
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations* (2nd ed.). Sage.
- Imangazina, M., Pimenova, M., & Develi, H. (2024). Language representation of nonverbal means: Peculiarities of verbalisation in the Kazakh and Russian languages. *Tiltanym*, (2), 111–124.
- Kendon, A. (2004). *Gesture: Visible action as utterance*. Cambridge University Press.
- Kostova, B. (2022). The potential of contrastive analysis in the study of discourse. *Studies in Linguistics, Culture, and FLT*, 10(2), 66–80.
- Krzeszowski, T. P. (1990). *Contrasting languages: The scope of contrastive linguistics*. Mouton de Gruyter.
- McNeill, D. (1992). *Hand and mind: What gestures reveal about thought*. University of Chicago Press.
- Nikolaeva, T. M., & Uspenskii, B. A. (1966). Iazykoznanie i paralingvistika [Linguistics and paralinguistics]. In *Lingvisticheskie issledovaniia po obshchei i slavianskoi tipologii* [Linguistic studies on general and Slavic typology]. Nauka.

- Patterson, M. L., Fridlund, A. J., & Crivelli, C. (2023). Four misconceptions about nonverbal communication. *Perspectives on Psychological Science*, 18(6), 1388–1411.
- Piper, A. (2023). What do characters do? The embodied agency of fictional characters. *Journal of Computational Literary Studies*, 2(1), 1–12.
- Poyatos, F. (1993). *Paralanguage: A linguistic and interdisciplinary approach to interactive speech and sound*. John Benjamins.
- Ruch, W., Wagner, L., & Hofmann, J. (2023). A lexical approach to laughter classification: Natural language distinguishes six (classes of) formal characteristics. *Current Psychology*, 42, 16234–16246.
- Surmilova, E. A. (2025). Phonetic stylistic devices and their functions in English tongue-twisters. *O'zbekistonda xorijiy tillar*, 11(4), 7–23.
- Tangriyev, V. A. (2024). Paralinguistic features in English and Uzbek translations of Paulo Coelho's *The Alchemist*. *FarDU ilmiy xabarlari*, 30(5), 247–253.
- Trager, G. L. (1958). Paralanguage: A first approximation. *Studies in Linguistics*, 13, 1–12.
- Wierzbicka, A. (1992). *Semantics, culture, and cognition: Universal human concepts in culture-specific configurations*. Oxford University Press.
- Wood, A., Sievert, S., & Martin, J. (2022). Semantic similarity of social functional smiles and laughter. *Journal of Nonverbal Behavior*, 46, 399–420.
- Yusupova, S. (2025). Paralinguistic expressions of respect in spoken interaction: A cross-cultural study of Uzbek, Japanese, and American English. *International Journal of Multilingualism*. Advance online publication.