https://doi.org/10.7592/FEJF2024.94.ukrainian

EXPLORING THE SEMANTICS AND STRUCTURE OF VOCATIVES IN UKRAINIAN FOLK SONGS

Olha Petrovych
Senior Researcher
Estonian Folklore Archives
Estonian Literary Museum, Estonia
Senior Lecturer
Department of Ukrainian Literature
Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Ukraine
olha.petrovych@vspu.edu.ua

Inna Zavalniuk
Professor
Department of Ukrainian Language
Dean of Mykhailo Stelmakh Faculty of Philology and Journalism
Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Ukraine
inna.zavalniuk@vspu.edu.ua

Valentyna Bohatko
Associate Professor
Department of Ukrainian Language
Deputy Dean of Educational and Social Work
Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Ukraine
valentyna.bohatko@vspu.edu.ua

Abstract: Ukrainian folk songs, as repositories of national cultural heritage, contain a significant collection of linguistic features, particularly in the realm of vocatives. Utilizing computational methods, this study examines the semantics and structure of the vocative case in Ukrainian folk songs to explore its role in social communication, shaping interpersonal relationships, conveying emotional nuances, and reinforcing cultural identity within lyrical narratives. Through the analysis of vocative structures in the corpus of folk songs from Podillia region, this research reveals their linguistic functions in folk songs – naming the addressee, expressing emotions, and evaluating various aspects of the addressee's identity. The study identifies common structural types across semantic groups, showcasing the skilful use of repetition, interjections, and parallelism to enhance emotional intensity and stylistic dimensions.

Keywords: Ukrainian folk songs, vocatives, computational analysis, part-of-speech tagging, structural types

INTRODUCTION

Ukrainian folk songs not only serve as a captivating expression of national cultural heritage but also encapsulate a linguistic treasury awaiting careful study. Among the various linguistic elements that weave the lyrical narratives, vocatives stand out as a distinct and culturally resonant feature. Vocatives as linguistic expressions addressing or calling specific individuals play a crucial role in establishing interpersonal relationships, conveying emotional nuances, and reinforcing cultural identity within lyrical contexts.

Previous research on vocatives, including works by Holubovska (2004), Slukhai (2005), Kosmeda & Plotnikova (2010), and Zahnitko (2017), delves into the anthropological and cultural aspects of linguistic categories within Slavic oral traditions. These studies recognize linguistic expressions as creative products of ethnicity, which contribute to the broader linguistic worldview (Siroka 2013; Wierzbicka 1992). Several researchers (Kononenko 2008; Radziievska 2007; Selivanova 2008; Skab 2002, 2007) have explored the extensive array of cultural concepts in the Ukrainian language, emphasizing the crucial role of oral poetry in the transmission and preservation of cultural identity.

Some works on the syntax of the Ukrainian language during the Soviet period (Bilodid 1972a: 225; Zhovtobriukh & Kulyk 1972) state that addresses are expressed in the vocative form[1] as it was then called (1), or nominative case (2).

(1) *A kudy letysh,* ***holube****?* [2]
'Where are you flying, **dove**?'[3]
(Petrovych 2024: 825,[4] line 2)

(2) *Ne yid,* ***Vasyl****, u Krym po sil,*
Bo zastanesh nezdorovoiu
'Don't go, **Vasyl**, to Crimea for salt,
Because you will find me ill'
(Petrovych 2024: 616, line 4)

It is worth noting that occasionally in texts, addresses can be expressed by nouns resembling the nominative case. However, according to modern Ukrainian linguistics it is more appropriate to consider them a vocative case with homonymous inflections to the nominative case (Zahnitko & Myronova 2013:

91). In such instances, the component of the indicated sample is characterized by a specific vocative intonation. This vocative case involves using nouns in a way that mimics the nominative case while serving the function of address, which can be seen as a stylistic or syntactic choice.

This concept of determining the vocative form instead of the vocative case was a result of political factors, such as the prohibition of the Ukrainian language under the Russian Empire, with two crucial periods of change in the vocative's grammatical qualification: after 1933 and after Ukraine's independence in 1991 (Masenko 2017). The grammatical status of the vocative case in the Ukrainian language was under threat because the Ukrainian language was expected to closely resemble Russian. Hence, the vocative as a separate form (but not case) was canonized under the influence of Russian linguistics. However, numerous Ukrainian linguists (Bezpoiasko & Horodenska & Rusanivskyi 1993: 22; Vykhovanets & Horodenska 2004: 57; Horpynych 2004: 70; Hryshchenko 2002 [1993]: 306; Kostusiak 2012: 72; Pliushch 2005: 99; Skab 2002) have consistently defended the grammatical category of the vocative case, the loss of which would have resulted in the disappearance of a unique feature preserved over centuries. Consequently, the vocative case in Ukrainian is primarily used for addressing people directly, and it is distinct from the nominative case, which typically indicates the subject of a sentence. This distinction is crucial for understanding the role of vocatives in both regular speech and in the specific context of folk songs.

Ukrainian ethnographer Rylsky and linguist Ponomariv highlighted the importance of vocatives in preserving linguistic integrity and noted potential threats to the vocative case, particularly due to the shift towards recognizing the vocative as a form rather than a case (Ponomariv 2000: 202–203). Rylsky (1987) has highlighted the widespread use of the vocative case in the Ukrainian language. This is confirmed by Ukrainian folk songs and other folklore genres, in which the vocative case is consistently used, as in (3) and (4).

(3) ***Horobeichyku, shpachku, shpachku***,
Chy buvav zhe ty v nashim sadku,
Chy vydav zhe ty, yak kopaiut na mak?
'**Little sparrow, starling, starling**,
Have you ever been to our garden,
Did you show how they eat poppies?'
(Petrovych 2024: 139, lines 1–3)

(4) *Pozhdy,* ***doniu****, do ponedilka,*
Bude shuba i fartushynka

'Wait, **my daughter**, until Monday,
There will be a fur coat and an apron'
(Petrovych 2024: 54, lines 5–6)

Address serves as a typical component of folk song texts (Shulzhuk 1969; Yermolenko 1999; Chabanenko 2002; Danyliuk 2011). Researchers have noted that the expressive qualities of keywords in folk songs are enhanced by their use in the vocative case, which highlights the addressee and emphasizes emotional and interpersonal connections. This use of the vocative case, compared to the nominative, adds a layer of intimacy and directness, thereby intensifying the emotional resonance of the songs. Shulzhuk (1969) studied vocatives as a distinct semantic and syntactic unit in his PhD thesis. He notes that vocatives are a prominent grammatical-stylistic device in folk songs, with their emotional expressiveness enhanced by the lexical meaning of words, subjective evaluation suffixes, explanatory words, particles, interjections, repetition, and parallelism. These findings highlight the multifunctional nature of vocatives and their importance in enriching the communicative and emotional depth of language.

This study aims to provide a comprehensive computational examination of the semantics and structure of vocatives in Ukrainian folk songs, particularly from the Podillia region. Podillia, a historic region in Ukraine, emerged as a distinct area in the mid-fourteenth century. This early recognition highlights its importance in the historical landscape of Ukraine. The region's status as a "land" or "duchy" under various rulers, including Hungarian, Polish, Lithuanian, Turkish, Russian, and Soviet empires, underscores its strategic and cultural significance (Yakovenko 2008–2009: 489). This historical complexity has cultivated a diverse array of cultural influences, making its folk songs a reflection of various historical epochs and cultural interactions. The Podillia dialect of the southwestern dialect group played an important role in the formation of standard Ukrainian, providing a diverse range of examples for studying how vocatives function in the Ukrainian colloquial language (Matviias 2008: 8). Additionally, the alignment of Podillia's folk songs with standard Ukrainian offers insights into how regional linguistic features, such as vocatives, have influenced and integrated into standard Ukrainian.

Unlike previous research, this study employs computational methods to analyse specific linguistic nuances of vocatives, such as their frequency, semantic and syntactic structures, morphological variations, and the emotional and pragmatic functions they serve within the texts.

The specific research questions guiding this study are:

– How are vocatives employed in Ukrainian folk songs, and what patterns emerge in their usage across different song structures and themes?

– What are the semantic, grammatical, and stylistic nuances of vocatives in Ukrainian folk songs, particularly those from the Podillia region?
– How do the frequency, syntactic functions, and morphological variations of vocatives contribute to their emotional and pragmatic roles within these songs?

This research explores the meanings and cultural significance of vocatives, providing insights into the interplay between language, folk song, and cultural identity, and highlighting their role in social communication and the transmission of emotions within the oral tradition. The study contributes to the understanding of the linguistic aspects of Ukrainian folk songs and introduces interdisciplinary methodologies to the field, combining linguistics, folklore, and computational analysis.

VOCATIVES AS MORPHOLOGICAL, SYNTACTIC, AND PRAGMATIC-SEMANTIC CATEGORY

The Ukrainian term for vocative expression is *zvertannia*. *Slovnyk ukrainskoi movy* (Dictionary of the Ukrainian Language) (Bilodid 1972b: 465) and *Velykyi tlumachnyi slovnyk suchasnoi ukrainskoi movy* (Great Explanatory Dictionary of Modern Ukrainian Language) (Busel 2005: 445) define *zvertannia* as follows: (1) the meaning of the action is to address; (2) a statement, opinion, request, etc., addressed to someone. Ukrainian linguists traditionally define vocatives as words or phrases that name a person or object who the speaker is addressing (Zahnitko & Myronova 2013: 91; Karaman et al. 2011: 435; Ponomariv 2000: 202; Danyliuk 2011).

While all languages possess vocatives and vocative phrases, some, like Ukrainian, additionally feature a vocative case. For example, in English, which has lost the vocative case, vocative phrases include *John* in "*Hey, John!*" and *Mary* in "*Please, Mary, come here.*" These examples illustrate how English uses specific phrases and intonation to address someone directly. The vocative case in the Ukrainian language, which Kachurovskyi (1994: 100–101) described as "under threat of extinction", has seen a significant decline in everyday usage in the late twentieth century. By the early twenty-first century, its occurrence in spoken language had become increasingly rare. Ukrainian scholars attribute this decline primarily to the strong influence of the Russian language during the Soviet era, which led to the frequent replacement of the vocative case with the nominative in oral speech (Radevych-Vynnytskyi 2008: 91). Despite this decline, the vocative case remains organically inherent in Ukrainian folk song

texts, where it continues to exhibit predominant usage. For example, in the folk song "Oi Petre, Petre i Ivane" (Oh Peter, Peter and Ivan), the line *Koly v tebe, **Yavdokho**, vesillia?* 'When is your wedding, **Yavdokha**?' (Petrovych 2024: 514, line 14) uses *Yavdokho* as a vocative form to directly address Yevdokiia (colloquial Yavdokha).

In-depth investigations into the discourse manifestations of vocatives broaden their conventional definition to include various types of address (Svennung 1958). Hill (2007: 2078) emphasizes that addresses can be direct, involving the identification of the interlocutor (e.g., *Kudy yidesh, **Romane**?* 'Where are you going, **Roman**?' (Petrovych 2024: 214, line 5)), or indirect, where the interlocutor remains unidentified. For example, an indirect address might be, "Someone should take care of this mess", where it is clear that someone is being addressed, but no specific individual is identified (see Zavalniuk 2002 on indirect addresses in Ukrainian texts). However, it is noteworthy that no examples of indirect address are found in the corpus of Podillia region's folk songs.

The syntactic structure of vocatives has been discussed by Zwicky (1974), Moro (2003), Hill (2007, 2013, 2014), and Slocum (2016). Hill (2014: 6) contributes to this discourse by offering a taxonomy that distinguishes vocatives from other frequently occurring sentence-initial elements. This taxonomy includes a differentiation between forms of address, which encompass vocatives, and exclamations that do not reference the addressee. For example, exclamations such as "Oh my god, I can't believe it!" express emotions or reactions but do not directly address or reference any specific individual.

Zwicky (1974) and Slocum (2016) delineated the distinction between calls and addresses. Zwicky (1974) categorizes vocatives into calls and addresses based on the pragmatic functions they serve. According to Zwicky (1974: 787), calls are "designed to catch the addressee's attention", whereas addresses aim to "maintain or emphasize the contact between the speaker and the addressee". Additionally, Ameka's work on interjections (1992, 2006 [1994]) provides further insight into the pragmatic functions of vocative-like expressions. For instance, conative interjections are expressions directed at an auditor with the intention of eliciting a response or action. Examples include "sh!" to request silence or "hey!" to call for attention (Ameka 2006 [1994]: 743–745). These interjections are essential for understanding how speakers use linguistic forms to manage interactions effectively.

Furthermore, vocatives can serve the purpose of initiating communication even when the speaker is uncertain about receiving a response. For example, calls may be employed to ascertain the presence of the addressee, with the presence itself being a prerequisite for successfully capturing the addressee's attention.

Ponomariv (2000: 203–204) divides vocatives into two groups: proper address (predominant in dialogic and polylogical speech) and rhetorical address (more characteristic of monological speech). Proper addresses denote a specific person to whom the speech is directed and are intended to elicit a reaction from that person, as in (5).

(5) *A: Kudy yidesh,* ***Romane****?*
'Where are you going, **Roman***?*'
R: *Na yarmarok,* ***mii pane***
'To the fair, **my lord**'
(Petrovych 2024: 214, lines 6–7)

Proper addresses can be characterized by imagery and expressiveness, acting as a means of expressing the speaker's feelings and their attitude towards those to whom the vocative expression refers. Proper addresses are usually directed to people, less often (in the case of personification) to other living beings: animals, birds, and in some cases (also when personified) – to inanimate objects (Masiukevych 1966: 18).

The main characteristic of rhetorical addresses is that they are not intended to elicit a response from the object to which they are addressed. Instead, they primarily serve to express the feelings of the speaker or author, to portray events in an imaginative, emotionally charged way, and to create an appropriate attitude in the reader or listener towards the content. For example, the rhetorical address in (6) expresses a sense of longing and wistfulness. In (7), *vitresenku*, a diminutive form of *viter* 'wind', conveys a sense of endearment and gentleness, expressing a tender attitude.

(6) ***Oi ty, zorko, ty, vechirniaia,***
Chom ty rano ta i ne skhodyla?
'Oh, **you, star, you, evening star***,*
Why didn't you rise early?'
(Petrovych 2024: 581, lines 1–2)

(7) *Oi povii,* ***vitresenku****, z vyshnevoho sadu*
'Oh blow, **little wind***,* from the cherry orchard'
(Petrovych 2024: 657, line 5)

Vocatives primarily serve the function of capturing the interlocutor's attention and are commonly expressed through first names, patronymics, surnames, kinship terms, and abstract or collective concepts. In folk songs, vocatives not only

name a certain object of address but also play a significant role in conveying the speaker's emotions, expressing his/her attitude, and creating a profound sense of personal communication, as in (8) and (9).

(8) *Ustan, ustan,* ***moia matinko****, ranenko,*
Ta polyvai rutu-miatu chastenko
'Get up, get up, **my mother***,* early,
But water the rue-mint often'
(Petrovych 2024: 562, lines 7–8)

(9) *Oi chekai, ne striliai,*
Ty, mii ridnyi brate
'Oh wait, don't shoot,
You, my own brother'
(Petrovych 2024: 347, lines 25–26)

Vocatives, in terms of their compositional structure, can be classified based on the number of words they comprise, and divided into two main groups: extended and non-extended (Zahnitko & Myronova 2013: 91). Non-extended vocatives consist of a single word, typically a noun or any substantive part of speech, without accompanying dependent words, as in (10). This group also includes vocatives preceded by interjection *oi* 'oh', as in (11).

(10) *Oi vstavai,* ***dytia****, pora tvobi vstavaty*
'Oh, get up, **baby**, it's time for you to get up'
(Petrovych 2024: 354, line 3)

(11) *Oi Romane, Romanochku,*
Pusty zh mene dodomochku.
'**Oh, Roman, Romanochka**,
Let me go home.'
(Petrovych 2024: 563, lines 14–15)

A vocative may incorporate explanatory words, often definitions, and be termed extended. The additional components in extended vocatives aid the reader or listener in envisioning the person or subject of the address (12), understanding the speaker's positive (13) or negative attitude towards the addressee, and distinguishing individual character traits, event reproductions, descriptions of the surroundings, etc.:

(12) ***Oi ty, molodaia divchynonko**, chom sumuiesh, zazhurylasia?*
'**Oh you, young girl**, why are you sad, sad?'
(Petrovych 2024: 636, line 2)

(13) ***Mamtsiu zh moia mylaia**,*
Shcho ya budu kazaty?
'**My dear mom**, what will I say?'
What will I say?'
(Petrovych 2024: 33, lines 3–4)

METHOD AND DATA

In this paper, the corpus of folk songs is based on the collection *Pisni Podillia: zapysy Nasti Prysiazhniuk v seli Pohrebyshche. 1920–1970 rr.* (Songs of Podillia: Records from Nastia Prysiazhniuk in the Village of Pohrebyshche. 1920–1970) (Myshanych 1976). This collection consists of 850 songs, 13,005 lines and 78,888 tokens. Vocatives were manually selected from the corpus and compiled in a database. This approach was chosen due to the difficulty of distinguishing vocatives in Ukrainian, as the vocative here has special inflections depending on the declension of the noun (there are 4 declension groups), belonging to a hard, soft, or mixed group, singular or plural (in the plural, the ending often coincides with the nominative), which adds to the complexity of accurately identifying vocatives.

Vocatives in Ukrainian folk songs were analysed using the R programming language (version 4.4.1) along with RStudio (version: 2024.04.2+764). The text corpus and R scripts for the analysis are available at Zenodo (Petrovych 2024).

The research conducted in RStudio encompassed a range of text analysis techniques, including tokenization, context extraction, part-of-speech (PoS) tagging, frequency analysis, and classification of semantic groups and structural types.

The algorithm for computational research in RStudio involved several key steps. First, the corpus file in .csv format was read into a data frame and tokenized. The analysis included counting the number of songs with varying counts of vocatives, the percentage ratio of vocatives in refrains and verses, and examining the relationship between song length and the frequency of vocatives. Vocative expressions that are repeated in the refrain, which is repeated several times within a song, were counted as multiple instances. The vocatives were differentiated into non-extended vocatives (consisting of a single word) and extended vocatives (incorporating explanatory words or definitions), with

counts for each group. The Ukrainian UDPipe model was applied for PoS tagging of the vocative expressions, and the occurrences of each part of speech were counted. The percentage of folk songs containing vocatives was counted across different genres. The number of songs containing vocatives within each genre was calculated. Additionally, the vocatives were categorized into several semantic groups based on previous studies and the investigation of the folk songs corpus. These groups include addresses with proper names, kinship terms, age-related terms, social positions, religious and ritual origins, professions and occupations, places of residence and origin, birds and animals, and inanimate objects. The vocatives were also classified into structural types according to their grammatical structures. The results of these analyses were visualized, using appropriate tools in RStudio.

VOCATIVE STRUCTURES IN PODILLIA REGION'S FOLK SONGS: DISTRIBUTION AND LINGUISTIC ANALYSIS

Using text and frequency analysis, we investigated the distribution of vocatives within the corpus of Ukrainian folk songs. R and RStudio were used to perform data analysis. Specifically, we read and processed the corpus data, counted the number of vocative lines per song, and categorized the songs accordingly. We then visualized the results using a histogram. Figure 1 illustrates both the number of vocatives and the corresponding frequency of songs with the same quantity of vocatives in their lyrics. This histogram offers a comprehensive overview of the distribution patterns of vocatives in Podillia region's folk songs.

The distribution pattern in Figure 1 reflects the variability in the use of vocatives across different songs. The prevalence of songs with 0 or 1 vocative suggests instances where the lyrical content may not require direct address, while an increase in the number of vocatives could indicate a more expressive or dialogue-driven narrative. However, this distribution could be influenced by the length of the songs. This potential bias towards song length suggests that shorter songs have a smaller chance of containing an overabundance of vocatives, simply due to their brevity.

Figure 2 explores the relationship between the song's length (measured by the number of lines) and the number of vocatives present in the song. This figure highlights that longer songs tend to incorporate more vocatives, potentially due to their more complex narratives and richer character interactions. However, some short songs may be densely packed with vocatives. For example, Figure 2 shows that vocatives are most frequently used in folk songs with up to 30 lines, typically ranging up to 5–10 vocatives.

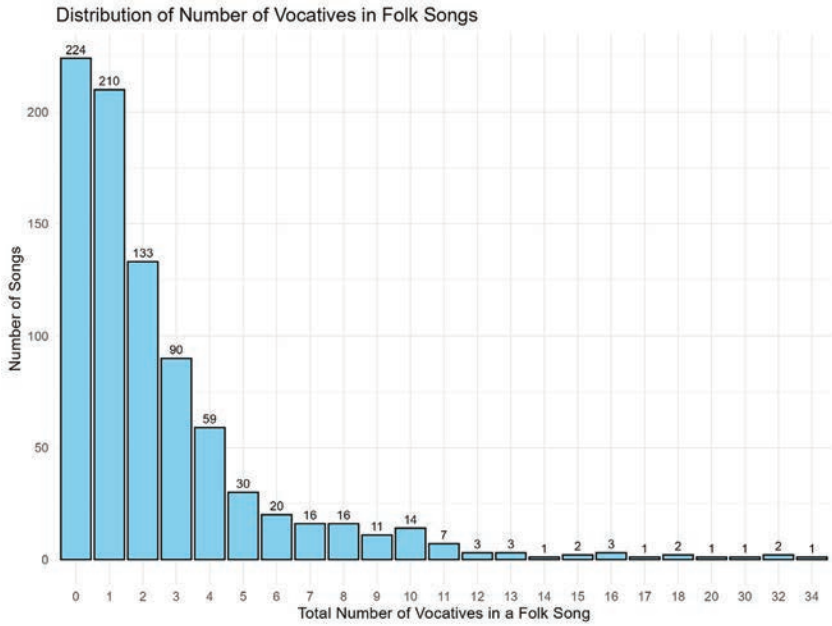

Figure 1. *Distribution of the number of vocatives in the corpus of Ukrainian folk songs.*

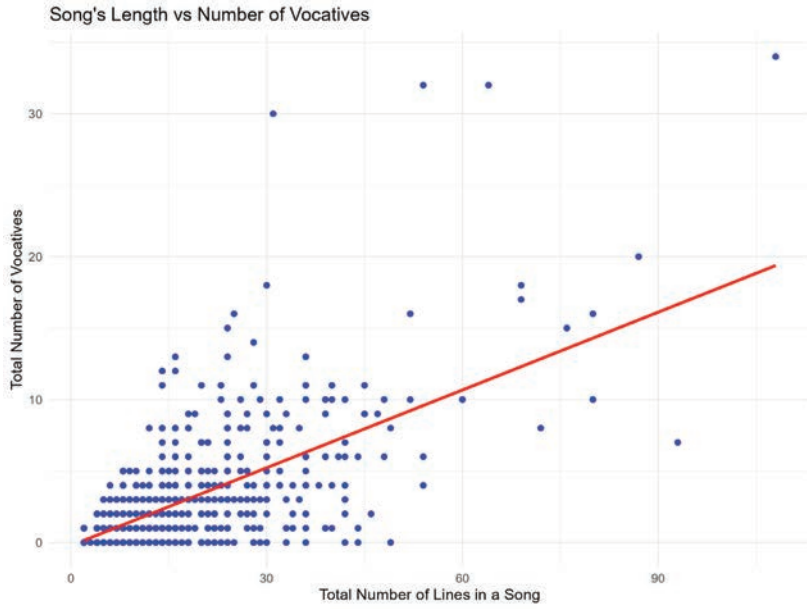

Figure 2. *The correlation between song length and the number of vocatives in the corpus of Ukrainian folk songs.*

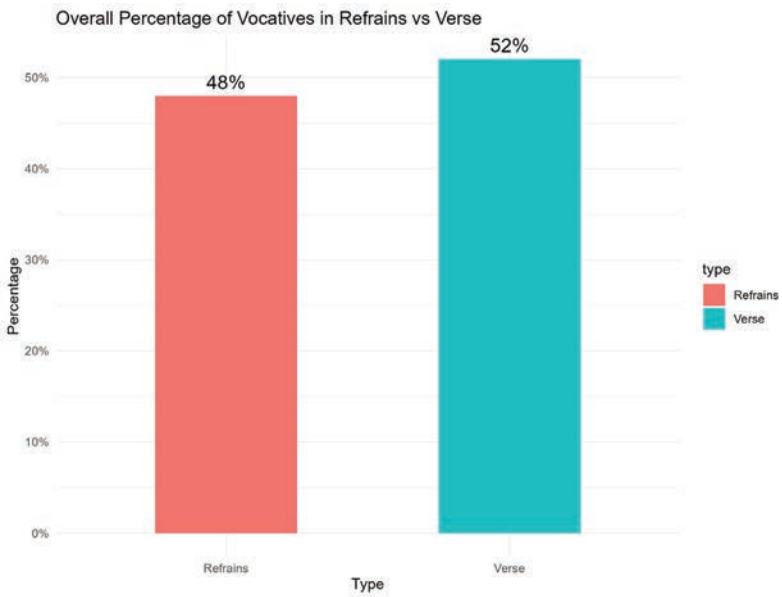

Figure 3. *The distribution of vocatives in refrains and verse in the corpus of Ukrainian folk songs.*

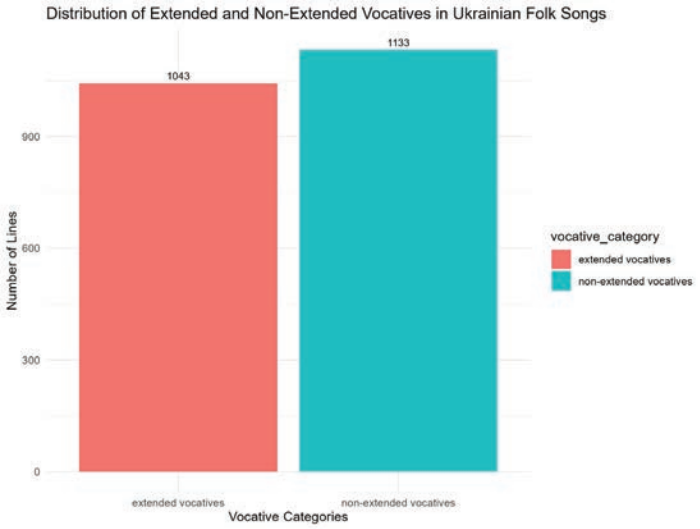

Figure 4. *Distribution of extended and non-extended vocatives in the corpus of Ukrainian folk songs.*

Figure 3 presents the overall percentage of vocatives found in refrains versus verse, with 52% of vocatives in verse and 48% in refrains. This near-equal distribution indicates a balanced use of vocative expressions in both structural components of the songs. The use of vocatives in refrains suggests a repetitive and emphatic nature, reinforcing the emotional or narrative impact, while their presence in verse points to their role in advancing the dialogue or addressing specific characters or entities within the song. The distribution across songs, the relationship with song length, and the balance between refrains and verse reveal the nuanced ways in which these linguistic elements contribute to oral tradition of the Podillia region.

As a result of calculating the distribution of extended and non-extended vocatives in Podillia region's folk songs, we found that their numbers are nearly equal, with extended vocatives making up 48% and non-extended ones 52% (Fig. 4). This balance in the distribution could be influenced by various factors, including traditional linguistic patterns that are characteristic of the region. However, without comparing this data to folk songs from other parts of Ukraine, we cannot determine whether this distribution is unique to Podillia.

The observed balance between extended and non-extended vocatives likely reflects the complex interplay of linguistic, cultural, and musical factors within Podillia's folk traditions. The selection of vocative structures may be influenced by the thematic content, rhyme schemes, and rhythmic patterns of the songs. For instance, extended vocatives might be more prevalent in songs that emphasize emotional or descriptive addressing.

In examining the distribution of each part of speech within vocative structures in the corpus, we observe distinctive patterns that highlight the semantic and grammatical roles of these elements. Following Shulzhuk (1969: 3, 20), we acknowledge a specific correlation between addresses in the vocative case and the parts of a sentence. The vocative construction most often consists of a noun in the vocative case, as in (14).

> (14) *De ty,* ***bido****, rodylasia, shcho ty meni sudylasia?*
> 'Where were you, **misfortune**, born, that you were destined for me?'
> (Petrovych 2024: 541, line 7)

Adjectives, pronouns, ordinal numerals, and participles can also function as vocatives. Unlike nouns, these parts of speech do not possess distinct vocative case inflections and typically use the same inflections as the nominative case. In such instances, these words are substantivized and take on the meaning of objectivity. For instance:

(15) *Chekai,* ***mylyi chornobryvyi****, khoch malu hodynu,*
Nekhai zhe ya pohoduiu maluiu dytynu!
'Wait, **dear black-browed**, at least a little hour,
Let me feed the little baby!'
(Petrovych 2024: 376, lines 25–26)

To analyse parts of speech in vocative expressions, we employed computational tools such as the Ukrainian UDPipe model for part-of-speech tagging. Figure 5 provides a breakdown of the occurrences for each part of speech within the vocative structures presented in the corpus.

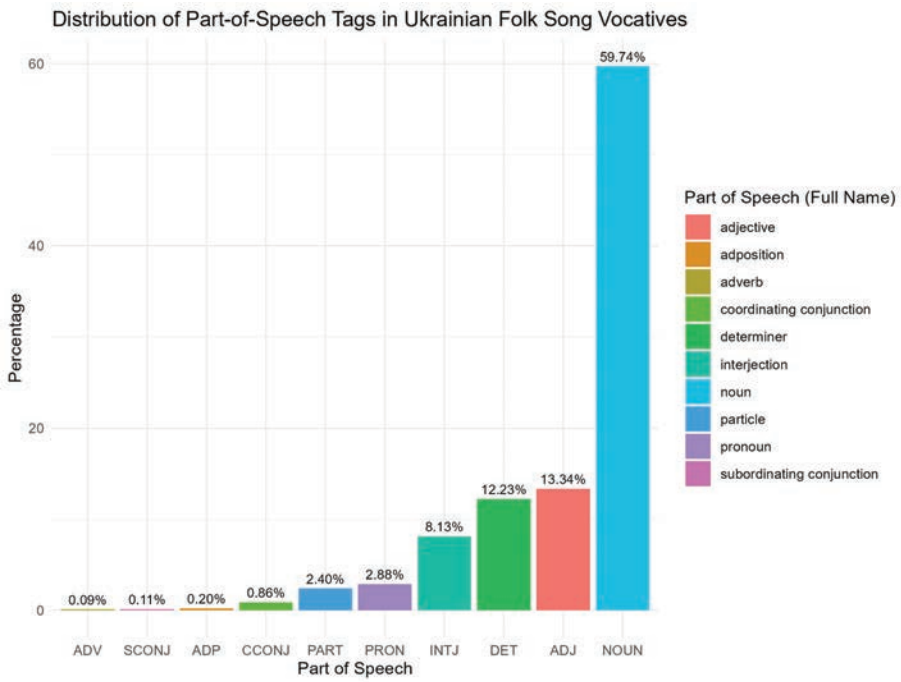

Figure 5. *Distribution of parts of speech in Ukrainian folk song vocatives in ascending order.*

The choice of a part of speech in vocative structures significantly influences the semantics and overall expression within a folk song context. Nouns can convey a sense of familiarity, respect, or emotion depending on the specific noun chosen. For example, addressing someone as *pryimache* 'daughter's husband who lives with her parents' carries different connotations compared to *synonku* 'dear, beloved son'. The address *pryimache* may suggest a hierarchical relationship,

implying dependency or a lack of autonomy within his wife's family. In contrast, *synonku* expresses affection and a close relationship, highlighting tenderness and a deep emotional connection. Occasionally, even a son-in-law might be addressed as *synonku* to reflect a positive attitude toward him.

Adjectives, whether substantive or as a part of a vocative phrase, add descriptive qualities to the address, emphasizing certain characteristics or emotions. For instance, addressing someone as *sertse kokhaneie* 'beloved heart' or *nevirnyi druzhe* 'unfaithful friend' brings a nuanced and emotionally charged dimension to the vocative.

Determiners, in our case possessive pronouns, play a role in personalizing and expressing ownership or familiarity in vocatives. In the context of vocatives, these possessive pronouns do not merely indicate possession but serve to personalize and establish emotional and relational context. For example, *moia nenko* 'my mother' or *nasha pannochko* 'our lady' use possessive pronouns *moia* 'my' and *nasha* 'our' to convey a sense of belonging and familiarity rather than literal possession.

Interjections in vocatives express strong emotions, reactions, or exclamations, conveying surprise, joy, dismay, or other intense feelings. Examples include *oi bozhe, bozhe* 'oh god, god' or *hei, koniu* 'hey, horse'. Personal pronouns *ty* / *vy* 'you (SG/PL)' create a sense of intimacy or immediacy, directly engaging the listener or reader, e.g., *oi ty, synochku mii, ty, dytyno moia* 'oh you, my son, you, my child'.

Coordinating conjunctions may connect elements in the vocative, contributing to a sense of unity or relationship, e.g., *bozhe, bozhe, i otets, i maty* 'god, god, and father and mother'.

Particles in vocatives serve various functions, such as emphasizing, mitigating, or expressing attitude, contributing to the overall tone and mood of the address. In our corpus, we identified emphatic-selective particles (*i*[5]*, da, ta, zh(e)*) used for reinforcement, categorical emphasis, and special highlighting of the entire message or its parts. For example:

– emphasizing endearment and emotional connection: *Oi synochku mii, dytyno* ***i*** *moia* 'Oh my son, my child' (Petrovych 2024: 516, line 4);

– highlighting and adding charm to descriptions: *Okh, vyshenka, vokh* ***da i*** *chereshenka* 'Oh, little cherry, oh and sweet cherry' (Petrovych 2024: 671, line 1);

– reinforcing affectionate addresses: *mylyi,* ***da*** *mylyi chornobryvyi* 'dear, oh black eyebrow beloved' (Petrovych 2024: 701, line 2);

– categorically emphasizing a specific address: *Oi ty, divchynonko* ***ta i*** *zaruchenaia* 'Oh you, little engaged girl' (Petrovych 2024: 520, line 4);

– specially highlighting fragrant objects: *Vasylechky* ***ta*** *zapashnii* 'Fragrant little basils' (Petrovych 2024: 105, line 1);
– expressing a lamentation with emphasis: *oi bidna* ***zh*** *moia* ***ta*** *holovonka* 'oh my poor head' (Petrovych 2024: 661, line 5);
– intensifying an exclamation: *Oi mede* ***zh*** *nash, mede* 'Oh our honey, honey' (Petrovych 2024: 463, line 1).

The examples above highlight how vocatives can be enriched with particles, producing emotional, expressive, and stylistic effects. The presence of particles and interjections alongside other parts of speech in vocative constructions contributes to the complex interplay of linguistic and emotional elements, enhancing the overall impact and meaning of the addresses.

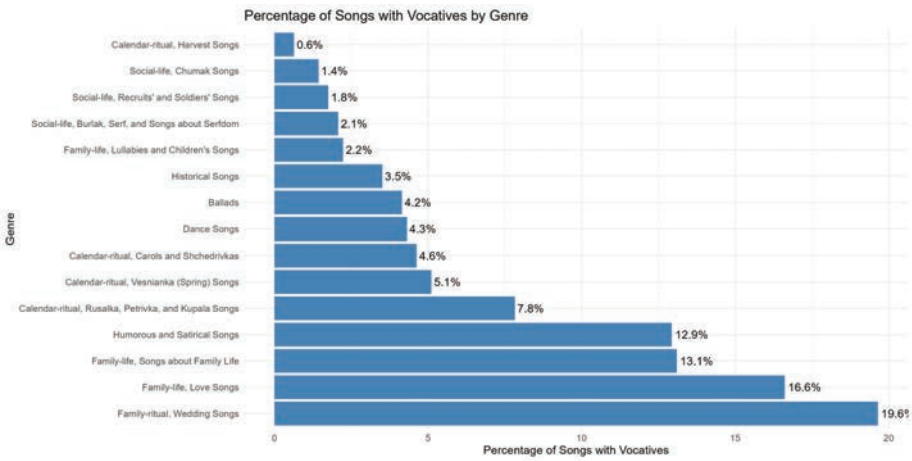

Figure 6*. The percentage of songs with vocatives for each genre, sorted in descending order by percentage, with percentage labels.*

Having analysed the parts of speech in vocative expressions, we now shift our focus to the frequency of vocatives across different song genres. Figure 6 presents a genre-based analysis of folk songs, highlighting the prevalence of vocatives within each category. It provides an overview of how frequently vocatives appear in different types of folk songs, reflecting their stylistic and thematic functions.

Family-ritual, wedding songs (19.6%) have the highest percentage of songs with vocatives. This likely reflects the importance of direct address in ceremonial contexts and the expressive nature of such songs. The next highest percentage is observed in love songs (16.6%), suggesting that vocatives are commonly used

to convey personal emotions and intimate sentiments. Songs about family life (13.1%) also show a significant use of vocatives, highlighting their role in addressing family members and depicting everyday interactions and relationships.

In contrast, calendar-ritual songs, which are closely tied to the agricultural calendar and seasonal rituals, show lower percentages of vocative usage. Subgenres within this category, such as rusalka, Petrivka, and Kupala songs (7.8%), *vesnianka* (spring) songs (5.1%), and carols and *shchedrivkas* (4.6%), all exhibit relatively modest use of vocatives. Particularly notable is the extremely low presence of vocatives in harvest songs (0.6%). This can be attributed to the communal nature of these songs, where the focus is often on collective action and celebration rather than individual expression. Thus, the rarity of vocatives in these songs aligns with their purpose of fostering a collective identity and prioritizing shared narratives over direct address.

Historical songs (3.5%) and social-life songs, including burlak[6] and serf songs, and songs about serfdom (2.1%), recruits' and soldiers' songs (1.8%), and *chumak*[7] songs (1.4%), exhibit low percentages of vocative usage. This pattern likely reflects the narrative nature of these genres, where the emphasis is on storytelling, recounting historical and social events, and portraying the hardships of life in these social strata, rather than on personal engagement or direct address.

Overall, Figure 6 highlights the varying importance and frequency of vocatives across different folk song genres. Genres with higher percentages of vocatives typically reflect more personal – ceremonial or intimate – contexts, whereas genres with lower percentages often focus on broader social or communal themes.

SEMANTIC GROUPS AND STRUCTURAL PATTERNS OF VOCATIVES IN PODILLIA REGION'S FOLK SONGS

Semantic grouping and structural patterning of vocatives in folk songs can be approached from different angles. Previous studies have presented several groupings of vocatives based on their functions or formal features. Schaden (2010) identifies three basic functions of vocatives: to identify the addressee(s), to predicate something on the addressee(s), and to activate the addressee(s).

Biber et al. (1999: 1109) demonstrate the diverse forms that vocatives can assume, providing examples such as endearments *(honey, darling, sweetie pie, dear*); kinship terms (*Daddy*); familiarizers (*guys, dude, bud, bro*); first name familiarized (*Johnny*); first name full form (*John*); title and surname (*Mr. Smith*); honorific (*Sir*); nickname (*Speedy*); impersonal vocatives (*Someone*

get that phone, will you!); and even elaborated nominal structures (*those of you who want to bring your pets along*).

Karaman et al. (2011: 436–437) and Shulzhuk (2004) differentiate vocatives based on their semantics into various groups: 1) surnames, first names, patronymics, pseudonyms and nicknames of people; 2) names of people according to their family relationships (kinship); 3) social position, class or social status, rank, title, etc.; 4) profession, specialty of a person; 5) nationality of the person, place of residence; 6) names of different parts of the body; 7) names of demonological and mythical creatures; 8) names of animals and birds and their nicknames; 9) names of plants; 10) names of natural phenomena; 11) geographical names; 12) abstract concepts (moral qualities, experiences, mental state, feelings, etc.); 13) references to some sort of group or collective; 14) commonly known concepts of culture and art.

Considering the classifications mentioned above and drawing on an investigation of the folk songs corpus, we identify the following semantic groups of vocatives: 1) addresses with proper names; 2) addresses by kinship; 3) addresses by age; 4) addresses by social position; 5) addresses by religious and ritual origin; 6) addresses by profession and occupation; 7) addresses by place of residence and origin; 8) addresses to birds and animals; 9) addresses to inanimate objects. Figure 7 illustrates the percentage distribution of these semantic groups within the corpus in ascending order.

The observed distribution of semantic groups, illustrated in Figure 7, can be explained by several factors. First, the prominence of kinship terms reflects the cultural significance of family ties and relationships within the context of Podillia region's folk songs. Terms like *myla* 'darling', *mamo* 'mother', *synu* 'son', *brate* 'brother', etc., convey various social and emotional nuances beyond mere kinship. These terms serve a dual function: they denote literal family relationships (16) and are used metaphorically (17) to express affection, respect, or familiarity. This duality highlights the singer's social or emotional authority, even in the absence of a direct kinship relation, enriching the semantic versatility of these terms and providing deeper insights into social and cultural dynamics.

(16) *Ne plach, ne plach,* ***stara maty****, ta i za mnoiu*
'Don't cry, don't cry, **old mother**, and for me'
(Petrovych 2024: 803, line 4)

(17) *A zroby meni,* ***brate, virnyi tovaryshu****,*
Z klen-dreva trunu
'And make me, **brother**, **faithful comrade**,
A coffin from a maple tree'
(Petrovych 2024: 754, lines 19–20)

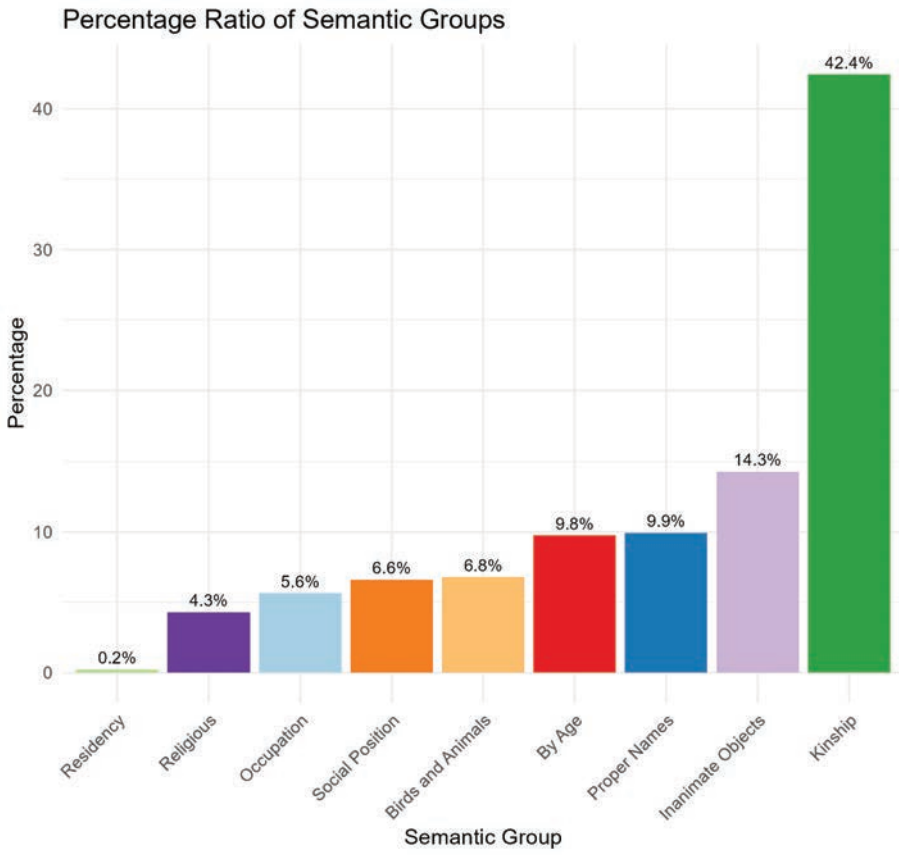

Figure 7. *Percentage ratio of semantic groups of vocatives in the corpus of Ukrainian folk songs in ascending order.*

Second, different song genres and themes also influence the use of vocatives across various semantic groups, particularly kinship and inanimate objects. For instance, kinship terms like *svaty* 'parents-in-law', *ziatiu* 'son-in-law', *nevistko* 'daughter-in-law', etc., are prevalent in wedding songs, reflecting the familial context of these occasions. This genre-specific usage contributes to the higher overall percentage of addresses by kinship, which dominate the corpus at 42.4%.

Addresses to inanimate objects (14.3%) are rhetorical and not intended for a response; they primarily express the singer's feelings, provide a figurative, emotionally intense depiction of events, and create a corresponding attitude towards the song's content, as in (18–19).

(18) *Povii,* ***vitre****, ta i z pivnochi,*
Rozpliushch, ***vitre****, meni ochi*
'Blow, **wind**, from the north,
Open my eyes, **wind**'
(Petrovych 2024: 603, lines 17–18)

(19) *Diakuiu vam,* ***porohy****,*
Shcho zbyvaly khloptsi nohy
'Thank you, **rapids**,
For bruising the boys' legs'
(Petrovych 2024: 662, lines 67–68)

The use of inanimate object vocatives varies significantly across different genres, with some genres showing a marked preference for this semantic group of vocatives. For example, vocatives of this group are most commonly found in songs about family life and love songs, where they often serve to heighten the emotional resonance of the lyrics. They are also prominent in calendar-ritual songs, particularly rusalka, Petrivka, and Kupala songs, where the symbolic and emotional power of inanimate objects is often invoked to reflect the thematic and ritualistic elements of the songs.

Third, the use of certain semantic groups may be tied to cultural symbolism, often through parallelism, as in (20):

(20) ***Zelenyi dubochku****, choho pokhylyvsia?*
Molodyi kozache*, choho zazhuryvsia?*
'**Green oak tree**, why did you bow down?
Young Cossack, what are you upset about?'
(Petrovych 2024: 193, lines 1–2)

Many addresses to birds and animals or inanimate objects in Ukrainian folk songs hold deep symbolic significance, reflecting cultural traditions (Koval 1987: 252; Danyliuk 2011: 37–38). These symbols often represent human qualities: the eagle or falcon embodies manliness, power, beauty, courage, and freedom; the dove signifies femininity; and the viburnum tree symbolizes a girl, etc., for example:

(21) *Ne zhurysia,* ***yavoronku****, ty shche zelenenkyi,*
Ne zhurysia, ***kozachenku****, ty shche i molodenkyi*
'Don't worry, **little sycamore**, you are still green,
Don't worry, **young Cossack**, you are still so young'
(Petrovych 2024: 749, lines 4–5)

(22) ***Ty zh mii sokolonku, syvyi holubonku,***
Oi da liuli, ***syvyi holubonku***
'**You my falcon, my grey dove**,
Oh, da liuli, **my grey dove**'
(Petrovych 2024: 512, lines 7–8)

These symbolic addresses primarily retain their literal connection with the birds and animals or inanimate objects they refer to. It is only through close reading and deeper analysis that one can discern the parallelism and symbolic associations with human beings.

Finally, addresses by kinship and symbolic addresses to birds, animals, and inanimate objects tend to resonate more strongly with the target audience of folk songs compared to other semantic groups, such as those based on religious and ritual origin or place of residence, thereby enhancing their emotional and cultural impact.

Addresses with proper names (9.9%) reflect regional preferences in the use of popular names. For example, there are noticeable shifts to names that were popular in the Podillia region at the time, such as Oksana among female names (e.g., replacing the name Mariika as in 23) and Petro among male names (24).

(23) *Oi choho plachesh, choho zhaluiesh,* ***moloda Oksanochko****?*
'Oh, why are you crying, why are you sorry, **young Oksanochka**?'
(Petrovych 2024: 263, line 14)

(24) *Poid, poid,* ***mii Petruniu****, vid mene,*
Mozhe naidesh krashchu divchynu za mene.
'Go, go, **my Petrunia**, from me,
Maybe you will find a better girl than me.'
(Petrovych 2024: 453, line 16–17)

While the grammatical structures of vocatives vary across different semantic groups, some common patterns persist. Figure 8 illustrates the most frequent structural types that exhibit similarities across various semantic groups. There are some limitations in abbreviation because we applied the Ukrainian UDPipe model for PoS tagging in RStudio. For instance, "DET+NOUN" represents possessive pronoun + noun (refer to section 3a below); "ADJ" stands for substantive adjective (see section 4a below); "DET+ADJ" signifies possessive pronoun + substantive adjective, as seen in section 4b below; and "ADJ+ADJ" indicates a combination of substantive adjective + substantive adjective (see section 4c below).

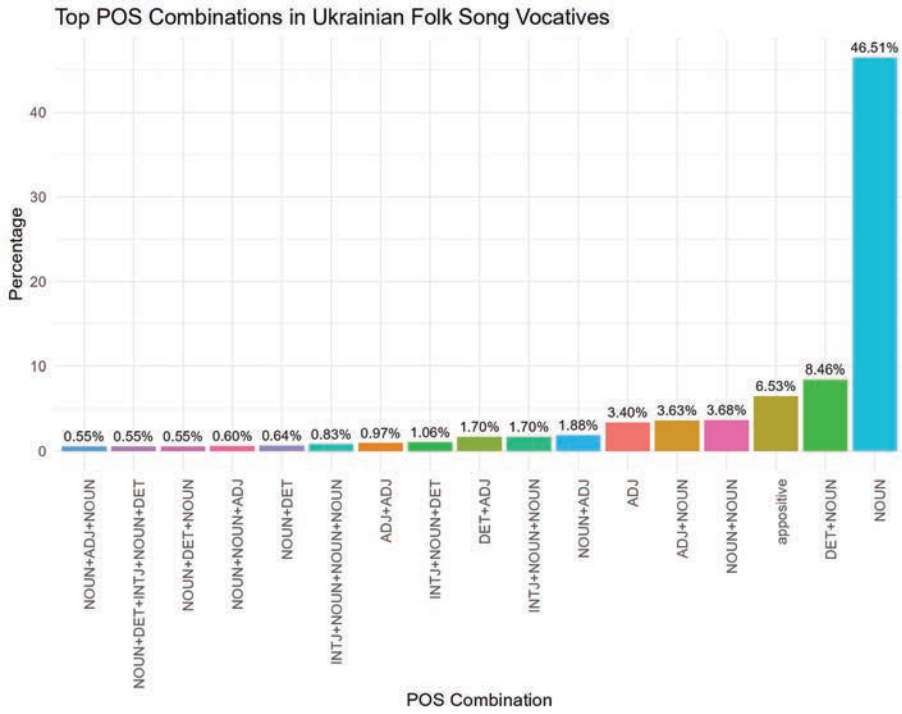

Figure 8. *Percentage ratio of the most frequent structural types of vocatives in the corpus of Ukrainian folk songs in ascending order. The abbreviations in legenda are as follows: ADJ = substantive adjective, DET = determiner (possessive pronoun in our case), INTJ = interjection, NOUN = noun.*

A computational analysis in RStudio identified 176 distinct structural types of vocatives in Podillia region's folk songs, of which Figure 8 displays the 17 most frequent ones. The following section provides a detailed overview of the structural types, categorized by their grammatical and morphological characteristics.

1. Nouns form 46.51% of all structural types; four main types of nouns are identified:

a) Non-derivative, i.e., basic forms without additional morphological changes: *otche* 'father', *ziatiu* 'son-in-law', *vdovo* 'widow', *dytia* 'child', *hospodariu* 'owner' (respectful address), *khaziaine*[8] 'owner', *vorohy* 'enemies', *bozhe* 'god', *zhenche* 'reaper', *boiary*[9] 'boyars', *rekrute*[10] 'recruit', *koniu* 'horse', *vitre* 'wind'; proper nouns: *Romane, Mykolo, Olekso, Maksyme, Parasiu, Semene, Petre, Ivane*.

Occasionally, a noun can be repeated and/or a synonymic noun can be added (e.g., *oi pane, pane ta i hospodariu*[11] 'oh lord, lord and owner').

b) Inflectional, i.e., nouns formed with various suffixes and prefixes: *svatove* 'parents-in-law' (archaic form of the word *svaty*), *svekrukho* 'mother-in-law', *komisaru* 'commissioner', *prykazhchyk*[12] 'bailiff', *harmonist* 'accordionist', *horlyku* 'a wild pigeon'.

c) Derivatives, i.e., nouns formed with diminutive suffixes *-un-, -us-, -ink-, -ts-, -yn-, -ochk-, -onk-, -enk-, -yts-, -echk-,* and *-k-*. These suffixes often change the meaning or connotation, giving the nouns a positive connotation and indicating the speaker's favourable attitude towards the addressee: *synuniu* 'son', *matusiu* 'mother', *matinko* 'mother', *kumtsiu* 'godmother', *dytyno* 'child', *podolianochko* 'little girl from Podillia', *cheliadonko*[13] 'young people', *vorizhenky* 'enemies', *chumachenku* 'chumak', *rybchyno* 'fish', *verbytse* 'willow'; proper nouns: *Petruniu, Mytruniu, Ialynko, Haliuniu, Nastuniu, Petrusiu, Levkunechku, Stepanku, Varochko*.

d) Compound nouns among addresses by religious and ritual origin: *panimatko* 'priest's wife' (< *pani* 'mistress' + *matka* 'mother (arch.)'), *panotchenku* 'priest' (*pan* 'mister' + *otets* 'father').

2. Appositives (6.53%), i.e., nouns or noun phrases that rename or provide additional information about a noun next to them:

a) "Noun + noun": *Vasyliu-khlopche* 'Vasyl boy', *Oksanochko-divo* 'Oksanochka, the virgin', *kumtsiu-liubtsiu* 'godmother, the darling', *pan-matusiu* 'mother, the lady', *otamane-pane* 'otaman, the lord', *khryste-tsariu* 'Christ the King', *tsyhanochko-vorozhechko* 'gypsy, fortune teller', *khloptsi-rybolovtsi* 'guys, the fishermen', *sokole-orle* 'falcon-eagle', *susidochky-holubochky* 'neighbours, the doves', *makivochky-holubochky* 'poppy, the doves'.

b) "Interjection + noun + noun": *oi matinko-zore* 'oh mother, the dawn', *oi did-lado*[14] 'oh, grandfather, Lado', *oi shchuko-rybo* 'oh pike-fish', *oi vyshenka-chereshenka* 'oh cherry-sweet cherry'. At times, these addresses are intensified by interjection + personal pronoun *ty* / *vy* 'you (SG/PL)' separated by a coma (*oi vy, khloptsi-rybolovtsi* 'oh, you guys, fishermen').

c) "Noun + noun + noun": *derevo, klen-derevo* 'tree, maple tree'.

Appositives can be amplified by a conjunction (e.g., *a dochky-holubochky* 'and daughters, the doves').

3. Binary word combinations formed according to the following formulas:

a) "Possessive pronoun + noun" (8.46%) and inversions "noun + possessive pronoun" (0.64%): *mii Romane* 'my Roman', *Oksano moia* 'my Oksana', *moie sertse* 'my heart', *moia dushko* 'my soul', *mii koniu* 'my horse', *peche zh nasha* 'our oven'. These combinations can be intensified by interjections (1.06%): *oi divchyno moia* 'oh, my girlfriend'. Additionally, such formulas can

be repeated and amplified by interjections between repetitions, like "noun + possessive pronoun + interjection + noun + possessive pronoun" (0.55%), as in *zhaliu mii, hei, zhaliu mii* 'my sadness, hey, my sadness'.

b) "Noun + noun" (3.68%): *pane Ivane* 'lord Ivan', *panno*[15] *Ialynko* 'lady Ialynka', *divko Motruniu* 'girl Motrunia', *pan Kanovskyi* 'lord Kanovskyi'. This formula can also be amplified by interjection (1.7%): *oi kozle, kozle* 'oh billy goat, billy goat', *oi zhuravko, zhuravko* 'oh crane, crane', *oi bratiku, sokolonku* 'oh brother, falcon'.

c) "Adjective + noun" (3.63%) and inversions "noun + adjective" (1.88%): *Baido molodenkyi* 'young Baida', *molodyi kozache* 'young Cossack', *male dytia* 'small child', *bidna syrotonko* 'poor orphan', *vrazhyi synu* 'hostile son' (abusive negative address), *hzheshnaia panno* 'sinful lady', *staryi zhandar* 'old gendarme', *syvaia zozulenko* 'grey cuckoo', *bila berezo* 'white birch'.

4. Substantive adjectives are common for addresses by kinship, age, social position, and addresses to birds and animals according to the following formulas:

a) "Substantive adjective" (3.4%): *prekhoroshyi* 'very good beloved', *myla* 'dear', *kokhana* 'beloved', *molodesenka* 'young lady', *staryi* 'old man', *mala* 'small girl', *bidna* 'poor girl', *bahata* 'rich woman', *voronyi* 'raven horse'.

b) "Possessive pronoun + substantive adjective" (1.7%): *mii mylenkyi* 'my dear', *moia liuba* 'my darling', *moia chornobryva* 'my black eyebrow girlfriend'.

c) "Substantive adjective + substantive adjective" (0.97%): *mylyi chornobryvyi* 'black eyebrow beloved'. This formula can be amplified by interjection or conjunction + personal pronoun *ty* / *vy* 'you (SG/PL)' separated by a comma: *oi ty, myla chornobryva* 'oh you, black eyebrow beloved', *a ty, mylyi chornobryvyi* 'and you, black eyebrow beloved'.

5. Tripartite addresses formed according to the following formulas:

a) "Interjection + noun + noun + noun" (0.83%): *oi vesno, vesno, vesnianochko* 'oh spring, spring, spring', *oi Petre, Petre, Ivane* 'oh Peter, Peter, Ivan', *oi verbo, verbo, verbytse* 'oh willow, willow, willow', *oi dole, dole, dole* 'oh fate, fate, fate'.

b) "Noun + noun + adjective" (0.6%): *yavore, yavoronku zelenenkyi* 'sycamore, green sycamore', *bozhe, bratyku ridnenkyi* 'god, dear brother', *bozhe, bratovonka myla* 'god, cute brother's wife'.

c) "Noun + possessive pronoun + noun" (0.55%): *doniu moia, Bondarivno* 'my daughter Bondarivna', *zolotarchyku, mii holubchyku* 'goldsmith, my dove'.

d) "Noun or substantive adjectives + adjective + noun" (0.55%): *brate, virnyi tovaryshu* 'brother, faithful comrade', *myla, holubko syva* 'darling, grey dove'.

The remaining structural types of vocative phrases can be generalized according to their function and construction, particularly in relation to kinship, age, social position, religious origin, profession, and residence. These vocative formulas are skilfully crafted using repetition, personal pronouns (*ty* / *vy* 'you (SG/PL)'), possessive pronouns, interjections, and conjunctions. The formation of these structures is based on several principles, including such as:

a) Repetition for emphasis or emotional effect. This involves repeating nouns or the head of the noun phrase, often accompanied by different adnominal elements such as possessive pronouns or interjections. This repetition serves to emphasize or intensify the emotional impact of the address. Examples include *kumo, kumo, kumochko ty moia* 'godmother, godmother, you my godmother'; *matinko moia, holubko moia* 'my mother, my dove'; *oi tatu, nash tatu, oi tatu ridnenkyi* 'oh dad, our dad, oh dear dad'.

b) Use of personal and possessive pronouns. Personal pronouns (*ty* / *vy* 'you (SG/PL)') and/or possessive pronouns are employed to address or refer to the addressee, adding a layer of personalization and connection. Examples include *oi vy, chumachenky, oi vy, liudy hozhi* 'oh, you, chumaks, oh you, good people', *oi didu mii, didu, ty, syvaia boroda* 'oh, my grandfather, grandfather, you, grey beard', *doniu moia, doniu moia, doniu moia hozha* 'my daughter, my daughter, my beautiful daughter'. This category can also encompass indirect references or criticisms, as seen in *oi ty, hrafe, hraf Pototskyi, ty, prevrazhyi synu*[16] 'oh, you, Count, Count Pototsky, you, a very hostile son'.

c) Interjections for emotional intensity. Interjections are frequently used to add emotional intensity and are a consistent feature in vocative constructions, reflecting the affective nature of these addresses. Examples include *oi myla zh moia, druzhyno virna* 'oh, my dear, faithful wife', *oi bozhe mii, bozhe, z vysokoho neba* 'oh my god, god, from high heaven', *oi hei, voly, oi hei, voly, ta i voly polovii* 'oh hey, oxen, oh hey, oxen, those light-red oxen'; *hop moi hrechanyky, hop moi yashni* 'hop my buckwheat cakes, hop my barley ones'.

d) Conjunctions for cohesion. Conjunctions play a crucial role in linking related entities or attributes, thereby contributing to the cohesion of complex vocative structures. Examples include *dity moi, dity, syny i vnuchata* 'my children, children, sons and grandchildren'.

e) Complex structures. Some vocative phrases are constructed using a combination of adjectives, nouns, adverbs, and emphatic-selective particles, creating intricate and expressive addresses. An example is *molodaia*

molodytse shche i molodychenko 'a young, young woman, and cute young woman' or *zeleneie zhyto shche i oves* 'green rye and oats'.

A noticeable feature of vocative structures is inversion, a syntactic phenomenon where the usual word order is reversed or rearranged, typically placing the adjective after the noun or altering the expected sequence of words. It contributes to the expressiveness of the performance, increases the emotional saturation, and contributes to the folk song rhythm. These aspects are essential for understanding the overall aesthetic and auditory appeal of the folk lyrics, which are significant factors in their oral transmission and reception. For example: *shtany moi syni, syni* 'my pants are blue, blue', *choloviche mii mylenkyi* 'my dear husband', *synok zhe mii naimenshenkyi* 'my youngest son', *sertse kokhaneie* 'beloved heart', *oi shyttia moie bilesenke* 'oh, my white sewing', *oi ty, dube zelenenkyi* 'oh you, green oak', *oi ty, misiats, oi ty, yasnyi* 'oh you, moon, oh you, bright'. In many cases the choice of vocative structures, influenced by rhyming, demonstrates the intricate relationship between form and function in folk song texts.

While the specific lexical choices, prefixes, and suffixes may vary across semantic groups, these common structural types provide a foundation for constructing vocatives in diverse linguistic contexts. The similarities in these structural elements suggest shared patterns in the expressive use of language across different semantic groups.

CONCLUSIONS

Vocatives in Ukrainian folk songs serve as linguistic tools, expressing emotions, establishing interpersonal connections, and enhancing the narrative's depth and vividness. Through our computational analysis of vocatives, we have illuminated their semantic, grammatical, and stylistic nuances, showcasing their integral role in the cultural and linguistic functioning of Ukrainian folk songs, particularly in the Podillia region.

Our study reveals that vocatives in folk songs are multifaceted, with functions that include naming the addressee, attracting his/her attention, expressing a range of feelings and emotions such as love, endearment, gentleness, longing, grief, joy, affection or anger. The relatively equal distribution of vocatives between refrains and verses, alongside a correlation between song length and vocative usage, underscores the importance of vocatives in the overall structure of the songs. Moreover, the balance between extended and non-extended vocatives suggests a deliberate choice in their deployment, tailored to the emotional and narrative needs of each folk song.

The analysis highlights how different parts of speech – nouns, adjectives, pronouns, interjections, and particles – contribute their own semantic nuances, thereby enhancing the emotional and expressive depth of vocatives.

Vocatives are more prevalent in family-ritual (wedding songs) and family-life songs (love songs, songs about family life) compared to historical and social-life songs. This distribution suggests that the personal and emotive nature of lyrical songs makes them a more conducive genre for vocative expressions. Calendar-ritual songs, while less frequent in their use of vocatives, employ them in a manner that underscores their ceremonial function, often invoking deities or natural elements to enhance their ritualistic impact.

The computational analysis reveals a diversity in the structural types of vocatives, identifying a total of 176 distinct types. This structural diversity ranges from simple, single-word expressions to complex, extended types incorporating multiple linguistic elements. Among the 17 most frequently occurring structures, certain patterns emerged as particularly preferred, including nouns (non-derivative, inflectional, derivative and compound), appositives, binary word combinations, substantive adjectives, and tripartite addresses. Nouns alone account for nearly half (46.51%) of all vocative structures, highlighting their central role in the Podillia region's folk songs.

Vocatives serve a wide array of functions, from expressing intimacy and familiarity to marking respect, authority, or social status. They also provide evaluative commentary on various attributes such as appearance, age, or occupation. For instance, repetitive structures often emphasize affection or urgency, while the use of personal and possessive pronouns personalizes and intensifies the emotional connection between the speaker and the addressee. Interjections further amplify emotional intensity, and conjunctions create cohesion in more complex phrases.

While certain common structural types persist, specific formulas vary based on semantic groups of vocatives (addresses with proper names, addresses by kinship, age, social position, religious and ritual origin, profession and occupation, place of residence and origin, addresses to birds and animals, inanimate objects). The analysis of vocative structures reveals the skilful creation of addresses through the repetition of nouns, adjectives, and interjections, as well as the strategic use of possessive pronouns, conjunctions and emphatic-selective particles.

Inversion in vocatives contributes to their rhythmic and melodious qualities. Vocatives, forming expressive repetitions, serve as guides for introducing substantive and emotional elements into folk song texts. Additionally, the consistent use of parallelism as a compositional technique further elevates the stylistic and text-creative dimensions of vocatives in folk songs.

Similarities in vocatives originate from the common practice of using proper names and diminutive forms to convey familiarity and affection. Differences arise from the flexibility in constructing vocatives using various linguistic elements to create nuanced expressions of personal relationships.

Looking ahead, this research lays the groundwork for further exploration of vocative structures in other regional folk traditions, potentially expanding the scope to include comparative analyses across different linguistic and cultural contexts.

ACKNOWLEDGEMENTS

This work was supported by the Estonian Research Council grant project MOB3JD1218, "Traditional Estonian and Ukrainian Folksongs: Comparative Corpus-Based Computational Analysis"; TK215, "Estonian Roots: Centre of Excellence for Transdisciplinary Studies on Ethnogenesis and Cultural Diversity". We sincerely thank the reviewers for their time and expertise in thoroughly evaluating the manuscript. Their valuable comments and constructive suggestions significantly improved the overall quality of this work.

NOTES

[1] The vocative form – instead of the vocative case, which is present in Ukrainian but absent in Russian – was canonized as a separate "form" outside of the Ukrainian case system due to Russian linguistic influence (Skab 2002: 88–89). It gained prominence during Soviet times and was institutionalized in the *Ukrainskyi pravopys* (1929: 28–44), aligning Ukrainian with Russian. Traditional academic grammars continued this separation (Bilodid 1972a: 225; Zhovtobriukh & Kulyk 1972).

[2] Transliteration of Cyrillic is done in accordance with the requirements of the current legislation (CMU Resolution No. 55 of 01.27.2010 "On streamlining the transliteration of the Ukrainian alphabet in Latin"; https://czo.gov.ua/en/translit).

[3] Hereinafter, unless otherwise indicated, the translation is done by the authors.

[4] Hereinafter this shows the number of the song.

[5] In this context, "i" functions as an emphatic-selective particle rather than a conjunction. Although "i" is commonly known as a coordinating conjunction used to link clauses or words of equal syntactic importance, its role here is distinct. As a particle, "i" serves to emphasize or highlight specific elements within the address, contributing to the reinforcement and special highlighting of the message. This dual functionality illustrates the polysemy of "i", where its meaning and grammatical role are determined by the context in which it appears.

[6] Man employed in dragging ships upstream.

[7] *Chumaks* were travelling merchants who delivered goods (salt, fish, grain, and others) for sale over long distance on carts (wagons) pulled by oxen. *Chumak* was a historical and traditional wagon-based trading occupation in the territory of modern Ukraine in the late medieval and early modern periods of history (Proskurova 2013).

[8] *Khaziain* 'owner' carries a negative connotation, referring to 'a wealthy and cruel owner'.

[9] *Boiary* are friends of the groom at the wedding.

[10] *Rekrute* 'recruit' means a soldier. In Ukraine, at the end of the eighteenth century, after the destruction of Zaporizhzhya Sich and all the remnants of Ukraine's autonomy, Russia introduced recruitment on Ukrainian lands. It was a way of manning the Russian army by force. A similar phenomenon occurred in Western Ukraine – the recruitment of Ukrainians into the Austro-Hungarian army. At that time, service in the army was practically lifelong: if the recruit did not die in the war, he returned home very old or crippled (Kolessa 1983 [1938]: 96). In the nineteenth century, recruits served in the army for 25 years. Since 1884, recruitment was replaced by general military service, and the name "recruit" was replaced by "soldier". Service in the Russian tsarist army led to the appearance of new folk genres – soldier and recruit songs as subgenres of historical songs (Lanovyk & Lanovyk 2005: 350).

[11] Here *pan* is a respectful address to a man, an owner.

[12] *Prykazhchyk* is a hired employee of a landowner who supervised some part of his household, performed various economic tasks or managed the household (Bilodid 1976: 631).

[13] *Cheliadonko* is a diminutive form from *cheliad.* It means: (1) the population of a feudal estate in the Old Russian state, which was in various forms of dependence on the feudal lord; (2) people who lived and worked in the landowner's estate, manor servants; people who held a low official or public position; (3) youth; wedding guests of the bride; (4) women, girls; (5) members of the same family (Bilodid 1980: 292; Hrinchenko 1958: 450).

[14] In the Ukrainian pre-Christian beliefs *Lado* and *Lada* as the male and female hypostases are the gods of a truthful married couple. They were addressed to have a happy marriage in wealth and love (Voitovych 2002: 442; Metropolitan Ilarion 1992 [1965]: 110). Mykola Kostomarov (1817–1885), Ukrainian historian, publicist, and writer, argued that in Slavic mythology, Lada symbolized nature, the basis of life; she was the mother of the Sun in its incarnation and the goddess of love, harmonious relationships, and welfare (Voropai 1958: 29). The calendar celebration of Lado and Lada lasted for a month, from the 25th of May till the 25th of June (O.S.).

[15] *Panno* is a respectful address to a woman.

[16] *Prevrazhyi synu* here means an abusive negative address, 'enemy'.

REFERENCES

Ameka, Felix 1992. The Meaning of Phatic and Conative Interjections. *Journal of Pragmatics*, Vol. 18, Nos. 2–3, pp. 245–271. http://dx.doi.org/10.1016/0378-2166(92)90054-F.

Ameka, Felix K. 2006 [1994]. Interjections. In: K. Brown (ed.) *Encyclopedia of Language & Linguistics*. Second edition. Oxford: Elsevier, pp. 743–746. https://doi.org/10.1016/B0-08-044854-2/00396-5.

Bezpoiasko, Olena K. & Horodenska, Kateryna H. & Rusanivskyi, Vitalii M. 1993. *Hramatyka ukrainskoi movy: Morfolohiia.* [Grammar of the Ukrainian Language: Morphology.] Kyiv: Lybid.

Biber, Douglas & Johansson, Stig & Leech, Geoffrey & Conrad, Susan & Finegan, Edward 1999. *Longman Grammar of Spoken and Written English.* London: Longman.

Bilodid, Ivan K. (ed.) 1972a. *Suchasna ukrainska literaturna mova: Syntaksys.* [Modern Ukrainian Literary Language: Syntax.] Kyiv: Naukova dumka.

Bilodid, Ivan (ed.) 1972b. *Slovnyk ukrainskoi movy: v 11 t.* Tom 3. [Dictionary of the Ukrainian Language: in 11 volumes. Vol. 3.] Kyiv: Naukova dumka.

Bilodid, Ivan (ed.) 1976. *Slovnyk ukrainskoi movy: v 11 t.* Tom 7. [Dictionary of the Ukrainian Language: in 11 volumes. Vol. 7.] Kyiv: Naukova dumka.

Bilodid, Ivan (ed.) 1980. *Slovnyk ukrainskoi movy: v 11 t.* Tom 11. [Dictionary of the Ukrainian Language: in 11 volumes. Vol. 11.] Kyiv: Naukova dumka.

Busel, Viacheslav T. (ed.) 2005. *Velykyi tlumachnyi slovnyk suchasnoi ukrainskoi movy.* [Great Explanatory Dictionary of Modern Ukrainian.] Kyiv & Irpin: Perun.

Chabanenko, Viktor A. 2002. *Stylistyka ekspresyvnykh zasobiv ukrainskoi movy.* [Stylistics of the Expressive Means of the Ukrainian Language.] Zaporizhzhia: ZDU.

Danyliuk, Nina O. 2011. Semantyko-stylistychni osoblyvosti narodnopisennykh zvertan. [Semantic and Stylistic Features of Folk Song Addresses.] *Ukrainska mova*, Vol. 4, pp. 32–39.

Hill, Virginia 2007. Vocatives and the Pragmatics – Syntax Interface. *Lingua*, Vol. 117, No. 12, pp. 2077–2105. http://dx.doi.org/10.1016/j.lingua.2007.01.002.

Hill, Virginia 2013. Features and Strategies: The Internal Syntax of Vocative Phrases. In: Barbara Sonnenhauser & Patrizia Noel Aziz Hanna (eds.) *Vocative! Addressing between System and Performance*. Berlin & Boston: Walter de Gruyter, pp. 133–156.

Hill, Virginia 2014. *Vocatives: How Syntax Meets with Pragmatics.* Empirical Approaches to Linguistic Theory, Vol. 5. Leiden & Boston: Brill.

Holubovska, Iryna O. 2004. *Etnichni osoblyvosti movnykh kartyn svitu.* [Ethnic Features of Linguistic Worldviews.] Kyiv: Lohos.

Horpynych, Volodymyr O. 2004. *Morfolohiia ukrainskoi movy.* [Morphology of the Ukrainian Language.] Kyiv: Akademiia.

Hrinchenko, Borys 1958. *Slovar ukrainskoi movy: v 4 t.* Tom 4. [Dictionary of the Ukrainian Language: in 4 volumes. Vol. 4.] Kyiv: Vyd-vo Akademii nauk Ukrainskoi RSR.

Hryshchenko, Arnold P. (ed.) 2002 [1993]. *Suchasna ukrainska literaturna mova.* [Modern Ukrainian Literary Language.] Kyiv: Vyshcha shkola.

Kachurovskyi, Ihor 1994. *Osnovy analizy movnykh form (stylistyka) / Grundformen der Sprachformenanalyse (Stilistik).* [Basics of the Analysis of Linguistic Forms (Stylistics).] Munich & Nizhyn: NDPU.

Karaman, Stanislav O. & Karaman, Olha V. & Pliushch, Mariia Ia. et al. 2011. *Suchasna ukrainska literaturna mova.* [Modern Ukrainian Literary Language.] Kyiv: Litera LTD.

Kolessa, Filiaret 1983 [1938]. *Ukrainska usna slovesnist.* [Ukrainian Oral Literature.] Edmonton: Kanadskyi Instytut Ukrainskykh Studii.

Kononenko, Vitalii I. 2008. *Mova u konteksti kultury.* [Language in the Context of Culture.] Kyiv & Ivano-Frankivsk: Plai.

Kosmeda, Tetiana A. & Plotnikova, Natalia V. 2010. *Linhvokontseptolohiia: mikrokontseptosfera "sviatky" v ukrainskomu movnomu prostori.* [Linguo-Conceptology: The Micro-conceptual Sphere "Holidays" in the Ukrainian Language Space.] Lviv: PAIS.

Kostusiak, Nataliia M. 2012. *Struktura mizhrivnevykh katehorii suchasnoi ukrainskoi movy.* [Structure of Interlevel Categories of Modern Ukrainian Language.] Lutsk: Volynskyi natsionalnyi universytet im. Lesi Ukrainky.

Koval, Alla P. 1987. *Praktychna stylistyka suchasnoi ukrainskoi movy.* [Practical Stylistics of the Modern Ukrainian Language.] Kyiv: Vyshcha shkola.

Lanovyk, Mariana & Lanovyk, Zoriana 2005. *Ukrainska usna narodna tvorchist.* Ukrainian Oral Folk Art.] Kyiv: Znannia-Pres.

Masenko, Larysa 2017. *Mova radianskoho totalitaryzmu.* [The Language of Soviet Totalitarianism.] Kyiv: Klio.

Masiukevych, O. M. 1966. Zvertannia v movi tvoriv T. H. Shevchenka. [Addresses in the Language of T. H. Shevchenko's Works.] *Ukrainska mova i literatura v shkoli*, Vol. 4, pp. 17–23.

Matviias, Ivan 2008. Vidobrazhennia osoblyvostei hovoriv u movi ukrainskoi khudozhnoi literatury. [The Reflection of Dialect Peculiarities in the Language of Ukrainian Fiction.] *Movoznavstvo*, Vol. 6, pp. 3–12. Available at https://movoznavstvo.org.ua/vsi-nomera-zhurnalu/statti/2008-6-listopad-gruden, last accessed on 9 October 2024.

Metropolitan Ilarion [Ivan Ohiyenko] 1992 [1965]. *Dokhrystyianski viruvannia ukrainskoho narodu.* [Pre-Christian Beliefs of the Ukrainian People.] Kyiv: AT "Oberehy". Available at https://chtyvo.org.ua/authors/Ohiyenko_Ivan/Dokhrystyianski_viruvannia_ukrainskoho_narodu/, last accessed on 9 October 2024.

Moro, Andrea 2003. Notes on Vocative Case: A Case Study in Clause Structure. In: Josep Quer & Jan Schroten & Mauro Scorretti & Petra Sleeman & Els Verheugd (eds.) *Romance Languages and Linguistic Theory 2001*. Amsterdam: John Benjamins, pp. 247–262. https://doi.org/10.1075/cilt.245.15mor.

Myshanych, Stepan (ed.) 1976. *Pisni Podillia: zapysy Nasti Prysiazhniuk v seli Pohrebyshche. 1920–1970 rr.* [Songs of Podillia: Records from Nastia Prysiazhniuk in the Village of Pohrebyshche. 1920–1970.] Kyiv: Naukova dumka.

Petrovych, Olha 2024. *Exploring Vocatives in Folk Songs of the Podillia Region.* [Data Set]. Zenodo. https://doi.org/10.5281/zenodo.13362628.

Pliushch, Mariia Ia. 2005. *Hramatyka ukrainskoi movy. Vol. 1: Morfemika. Slovotvir. Morfolohiia.* [Grammar of the Ukrainian Language. Vol. 1: Morphophonology. Word Formation. Morphology.] Kyiv: Vyshcha shkola.

Ponomariv, Oleksandr 2000. *Stylistyka suchasnoi ukrainskoi movy.* [Stylistics of the Modern Ukrainian Language.] Ternopil: Navchalna knyha Bohdan.

Proskurova, Svitlana 2013. Chumatstvo. [Chumak-occupation.] In: V. A. Smolii (ed.) *Entsyklopediia istorii Ukrainy.* Vol. 10. Kyiv: Naukova dumka. Available at http://www.history.org.ua/?termin=Chumatstvo, last accessed on 9 October 2024.

Radevych-Vynnytskyi, Yaroslav 2008. *Etyket i kultura spilkuvannia.* [Etiquette and Culture of Communication.] Kyiv: Znannia.

Radziievska, Tetiana V. (chief ed.) 2007. *Mova i movoznavstvo v dukhovnomu zhytti suspilstva.* [Language and Linguistics in the Spiritual Life of Society.] Kyiv: Vydavnychyi Dim Dmytra Buraho. Available at https://www.inmo.org.ua/assets/files/Mova%20i%20movoznavstvo%20v%20duhovnomu%20jhytti%20suspilstva.pdf, last accessed on 14 October 2024.

Rylskyi, Maksym 1987. *Zibrannia tvoriv: u 20 t.* [Collection of Works: In 20 Volumes.] Vol. 16. Kyiv: Naukova dumka.

Schaden, Gerhard 2010. Vocatives: A Note on Addressee-Management. *University of Pennsylvania Working Papers in Linguistics*, Vol. 16, No. 1. Available at https://repository.upenn.edu/pwpl/vol16/iss1/20, last accessed on 9 October 2024.

Selivanova, Olena Oleksandrivna 2008. *Suchasna linhvistyka: napriamy ta problem.* [Modern Linguistics: Directions and Problems.] Poltava: Dovkillia-K.

Shulzhuk, Kalenyk 1969. *Obrashchenyia v ukraynskykh narodnykh pesniakh.* [Addresses in Ukrainian Folk Songs.] Diss. (PhD Thesis). Kyivskyi pedahohichnyi instytut imeni A. M. Horkoho.

Shulzhuk, Kalenyk 2004. *Syntaksys ukrainskoi movy.* [Syntax of the Ukrainian Language.] Kyiv: Akademiia.

Siroka, Danka 2013. A Linguistic Picture of the World and Expression of Emotions through the Prism of Expressive Lexis. *Journal of Education Culture and Society*, Vol. 4, No. 2, pp. 297–308. http://dx.doi.org/10.15503/jecs20132.297.308.

Skab, Marian 2007. Vokatyvni formy v suchasnomu ukrainskomu movlenni: yakisna ta kilkisna kharakterystyky. [Vocative Forms in Modern Ukrainian Speech: Qualitative and Quantitative Characteristics.] *Naukovi zapysky Ternopilskoho natsionalnoho pedahohichnoho universytetu: Seriia Movoznavstvo*, Vol. 1, No. 16, pp. 291–302.

Skab, Marian S. 2002. *Hramatyka apeliatsii v ukrainskii movi.* [Grammar of Appeal in the Ukrainian Language.] Chernivtsi: Misto.

Slocum, Poppy M. 2016. *The Syntax of Address.* Diss. (PhD Thesis). Stony Brook University.

Slukhai, Nataliia V. 2005. *Etnokontsepty ta mifolohiia skhidnykh slovian v aspekti linhvokulturolohii.* [Ethno-concepts and Mythology of the Eastern Slavs in the Aspect of Linguoculturology.] Kyiv: Kyivskyi universytet.

Svennung, Josef 1958. *Anredeformen: Vergleichende Forschungen zur indirekten Anrede in der dritten Person und zum Nominativ für den Vokativ*. Uppsala: Almqvist & Wiksell.

Ukrainskyi pravopys [Ukrainian Orthography] 1929. Kharkiv: Derzhavne vydavnytstvo Ukrainy.

Voitovych, Valerii M. 2002. *Ukrainska mifolohiia.* [Ukrainian Mythology.] Kyiv: Lybid.

Voropai, Oleksa 1958. *Zvychai nashoho narodu: Etnohrafichnyi narys*. [Customs of Our People: Ethnographic Essay.] Vol. II. Munich: Ukrainske vydavnytstvo.

Vykhovanets, Ivan R. & Horodenska, Kateryna H. 2004. *Teoretychna morfolohiia ukrainskoi movy.* [Theoretical Morphology of the Ukrainian Language.] Kyiv: Pulsary.

Wierzbicka, Anna 1992. *Semantics, Culture, and Cognition: Universal Human Concepts in Culture-Specific Configurations.* Oxford & New York: Oxford University Press.

Yakovenko, Natalia 2008–2009. A "Portrait" and "Self-Portrait" of the Borderlands: The Cultural and Geographic Image of "Ukraine" in the Sixteenth and Early Seventeenth Centuries. *Journal of Ukrainian Studies*, Vols. 33–34, pp. 487–502. Available at https://archive.org/stream/journalofukraini3334cana/journalofukraini3334cana_djvu.txt, last accessed on 10 October 2024.

Yermolenko, Svitlana Ia. 1999. *Narysy z ukrainskoi slovesnosti (stylistyka ta kultura movy).* [Essays on Ukrainian Philology (Stylistics and Language Culture).] Kyiv: Dovira.

Zahnitko, Anatolii P. 2017. *Teoriia linhvopersonolohii.* [Theory of Linguopersonology.] Vinnytsia: Nilan-Ltd.

Zahnitko, Anatolii & Myronova, Halyna 2013. *Syntaksys ukrainskoi movy: Teoretyko-prykladnyi aspekt.* [Syntax of the Ukrainian Language: Theoretical and Applied Aspect.] Brno: Masarykova univerzita. Available at http://digilib.phil.muni.cz/data/handle/11222.digilib/128790/monography.pdf, last accessed on 10 October 2024.

Zavalniuk, Inna 2002. Nepriami zvertannia v ukrainskii movi. [Indirect Addresses in the Ukrainian Language.] *Naukovi zapysky Vinnytskoho derzhavnoho pedahohichnoho universytetu imeni M. Kotsiubynskoho. Seriia: Filolohiia*, Vol. 4, pp. 16–20.

Zhovtobriukh, Mykhailo A. & Kulyk, Borys M. 1972. *Kurs suchasnoi ukrainskoi literaturnoi movy.* [Course of Modern Ukrainian Literary Language.] Vol. 1. Kyiv: Vyshcha shkola.

Zwicky, Arnold M. 1974. Hey, Whatsyourname! *Papers from the Regional Meeting of the Chicago Linguistic Society*, Vol. 10, pp. 787–801. Available at https://web.stanford.edu/~zwicky/hey-whatsyourname.pdf, last accessed on 10 October 2024.

Olha Petrovych (PhD) is Senior Research Fellow at the Estonian Folklore Archives, Estonian Literary Museum, Estonia, and Senior Lecturer of the Department of Ukrainian Literature at Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Ukraine. Her research interests include folklore, digital humanities, language processing, computer graphics and visualization, and innovative technologies in literary education.

olha.petrovych@vspu.edu.ua

Inna Zavalniuk (DSc) is Professor of the Department of Ukrainian Language and Dean of the Mykhailo Stelmakh Faculty of Philology and Journalism at Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Ukraine. Her main research areas focus on linguistic stylistics, onomasiology, and the history of the Ukrainian literary language.

inna.zavalniuk@vspu.edu.ua

Valentyna Bohatko (PhD) is Associate Professor of the Department of Ukrainian Language and Deputy Dean for Educational and Social Work at Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Ukraine. She teaches courses in Ukrainian language, the history of the Ukrainian literary language, and methodology for teaching Ukrainian language and philological disciplines in higher education.

valentyna.bohatko@vspu.edu.ua