

INTERNATIONAL JOURNAL OF PHILOLOGY

Founder:

National University of Life and Environmental Sciences of Ukraine

Year of foundation: 1997

Frequency: quarterly

*Recommended for printing and distribution
via the Internet by the Academic Council
of National University of Life and Environmental Sciences of Ukraine
(Minutes No. 8 of February 27, 2025)*

Media identifier: R30-02294

(Decision of the National Council of Television
and Radio Broadcasting of Ukraine No. 1795, Minutes No. 31, dated 21.12.2023)

**The journal is included in the list
of Professional Scientific Publications of Ukraine**

Category "B". Field of knowledge: 011 – Educational,
Pedagogical Sciences and 035 – Philology

(Order of the Ministry of Education and Science of Ukraine of March 17, 2020, No. 409)

**The journal is presented international scientometric databases, repositories
and scientific systems:** Google Scholar, Vernadsky National Library of Ukraine,
BASE, Ulrichsweb, Dimensions, UCSB Library,
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МІЖНАРОДНИЙ ФІЛОЛОГІЧНИЙ ЧАСОПИС

Засновник:

Національний університет біоресурсів і природокористування України

Рік заснування: 1997

Періодичність випуску: щоквартально

*Рекомендовано до друку та поширення
через мережу Інтернет Вченою радою
Національного університету біоресурсів і природокористування України
(протокол № 8 від 27 лютого 2025 р.)*

Ідентифікатор медіа: R30-02294

(Рішення Національної ради України з питань телебачення
і радіомовлення № 1795, протокол № 31 від 21.12.2023)

**Журнал входить до переліку
наукових фахових видань України**

Категорія «Б». Галузь знань: 011 – Освітні, педагогічні науки та 035 – Філологія
(Наказ Міністерства освіти і науки України від 17 березня 2020 р. № 409)

**Журнал представлено у міжнародних наукометричних базах даних,
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Зміст

О. Балалаєва

Чинники семантичної мотивації наукових назв рослин..... 9

К. Кудрик, Т. Лазаренко

Обмін як спосіб ефективного вивчення іноземної мови23

О. Муравін

Рецепція історичної пам'яті у творах сучасних польських письменників.....42

Н. Кравченко, О. Юденко

Когнітивна обробка візуальної метафори
в ракурсі Теорії Концептуальної Метафори58

І. Конончук

Обробка візуальних метафор: як тип концептуальної мережі
та когнітивний фокус формують інтерпретацію70

Н. Резнік, О. Юмачікова, Ю. Гаврилюк, Н. Шевченко, К. Мазур

Феномен паронімії в сучасній українській економічній термінології
як фактор дестабілізації професійного спілкування82

Contents

O. Balalaieva

Factors of semantic motivation of scientific plant names 9

K. Kudryk, T. Lazarenko

Exchange as a means of effective foreign language learning23

A. Muravin

Reception of historical memory in the works of contemporary Polish writers42

N. Kravchenko, O. Yudenko

Cognitive processing of visual metaphor from the perspective
of Conceptual Metaphor Theory.....58

I. Kononchuk

Processing visual metaphors: How conceptual network type
and cognitive focus shape interpretation70

N. Reznik, O. Yumachikova, Yu. Havryliuk, N. Shevchenko, K. Mazur

The phenomenon of paronymy in contemporary Ukrainian economic terminology
as a destabilising factor in professional communication
.....82



Factors of semantic motivation of scientific plant names

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Abstract. Scientific plant names are a valuable lexical layer for studying categorisation as a process of verbalised ordering of knowledge of the environment, specific to each variant of the scientific and language picture of the world. The aim of the paper was to analyse the factors determining the semantic motivation of scientific names of weeds in Latin and Ukrainian. The study used etymological and semantic analysis of phytonyms, comparative method and generaliation. The research material was 100 binomial plant names, obtained as a result of continuous sampling from the guide of weeds in Ukraine. The paper investigated productive patterns of plant scientific names' formation in the Latin and Ukrainian languages, examined the main motives for plant naming in both languages. This study showed that the scientific plant names of in both languages are motivated by a combination of several common aspects including appearance, properties, place of occurrence, use and other fixed in the generic name and specific epithet. The findings confirmed the conclusions of modern research that the mechanism of nomination is based on the semantic motivation of phytonyms, determined by the choice of the motivator from the zone of information predominantly about the appearance (shape, colour, size, similarity of plants or their parts) and properties (taste, smell, tactile sensation, positive and negative properties). The results can be used in the training of specialists in the field of knowledge "Agrarian Sciences and Food"

Keywords: naming of plants; motives for naming; phytonyms; generic name; specific epithet; etymology; Latin; Ukrainian

Introduction

In modern linguistics, the study of phytonyms is a highly complex and challenging area of research requiring a multi-pronged approach that integrates different types of knowledge.

Suggested Citation:

Balalaieva, O. (2024). Factors of semantic motivation of scientific plant names. *International Journal of Philology*, 29(1), 9-22. doi: 10.31548/philolog/1.2025.09

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The relevance of the research is determined by the fact, that the botanical nomenclature is of the utmost importance in studying categorisation and understanding the relationship between humans and the environment, which are one of the most topical issues of modern scientific thought.

Scholars emphasised that plant names have twofold value: primarily a practical one, categorising objects of the plant kingdom, but also theoretical – phytonyms are valuable material for scientific research, since they represent a real cultural heritage (Drăgulescu, 2024). Plant names encode a significant amount of information on the cultural system that has generated them. Also analysis of plant names, according to M. Bagli (2021) “provides insights into the psychological processes and linguistic strategies used to encode nature into language”; they are not arbitrary, their etymologies largely depend on extra-linguistic factors.

Contemporary research such as M. Boháčová (2022) investigated plant names as a scientific problem in different aspects: cross-linguistic and polyconfrontative, comparing plant names in different and often unrelated languages; cognitive and linguocultural, focused on this stratum of vocabulary in the light of human cognitive activity and linguistic picture of the world; semantic and onomasiological, dealt with the motivation of plant names; multidisciplinary approach, etc. Although the study of phytonyms has a solid tradition in scientific research, some challenges tied to uncovering the mechanisms behind their formation remain insufficiently addressed.

In particular, scientists A. Villalva *et al.* (2019) noted that uncovering similarities and divergences from diachronic and synchronic observations on plant names in different languages “has proven to be a useful strategy to consolidate findings and information gaps”. Among various scientific challenges, the issue of identifying the factors that influence the selection of motivating traits in the nominative

process stands out as a primary focus for contemporary research in this area, reflecting their complex nature and significant diversity.

First, Latin and Ukrainian are distantly related and hence it was of scientific interest to compare the mechanisms of motivation of plant names in these languages. Second, a fairly large number of studies such as J. Waniakowa (2021) and M.T. Caceres-Lorenzo & M. Salas-Pascual (2022) was devoted to common, folk and dialect names of plants, so author concentrated on scientific names. Third, the attention of the researchers was mainly directed to the study of the names of plants having positive properties in human practice – medicinal plants (Panasenko, 2021), crop plants (Peruzzi, 2020), ornamental plants, etc. Much research has been also devoted to the names of trees (Blažek, 2018).

Hence, this paper focused on the names of weed plants. The novelty of this research is caused by the fact that this group of phytonyms has not been the subject of scientific research. The purpose of the study was to investigate the semantic motivation of scientific names of weeds, as well as the main factors influencing plant naming in Latin and Ukrainian. To achieve the goal, it was necessary to solve the following tasks:

- 1) to analyse Latin and Ukrainian names of weed plants etymologically;
- 2) to investigate productive patterns of plant scientific name formation in Latin and Ukrainian;
- 3) to examine the main motives for plant naming in both languages.

Materials and Methods

The study used etymological and semantic analysis of phytonyms, comparative method and generalisation. The research material was 100 binomial plant names, obtained as a result of continuous sampling from the guide of weeds (Kosolap *et al.*, 2022). In line with the research tasks, at the first stage an etymological analysis of weed names was carried out. The

lexicographic base of the study was several etymological dictionaries. To study the etymology of Latin plant names, the following dictionaries were used: "Etymological dictionary of Latin and the other Italic languages" (Vaan, 2018), "Etymological dictionary of botanical plant names" (Genaust, 2017), "The names of plants" (Gledhill, 2008). To etymologise the Ukrainian plant names "Etymological dictionary of the Ukrainian language" by O.S. Melnychuk *et al.* (1982) was used. To clarify some aspects of the origin of Ukrainian phytonyms the scientific monograph "History of Ukrainian botanical vocabulary (XIX – beg. XX)" by I.V. Sabadosh (2014) was also applied.

In this study, the methodological framework for determining motivational factors was based on the typology of factors influencing the semantic motivations for plant naming in various European languages, developed by P. Dębowski & J. Waniakowa (2019). The main factors conditioning the semantic motivation of plant names and general motivational mechanisms adopted in this study were: the appearance of plants; the properties of plants; the place of occurrence of plants; the usage of plants; other motivations.

Since scientific plant names are binominal, being a combination of a generic name and a specific epithet, at the second stage, productive patterns of construction of species names of weeds in Latin and Ukrainian were found and compared according to the selected motivational factors determining the nomination of each component as well as their combinations. The generic name was taken as the principle component determining the reference of scientific plant names to a particular pattern. At the third stage, main motives for plant naming in both languages were quantitatively analysed. This made it possible to determine the percentage ratio of factors determining the semantic motivation of generic names and specific epithets in scientific names of weeds and to compare the data in the Latin and Ukrainian

languages. The generalisation was used to formulate conclusion.

Results and Discussion

The motivation of phytonyms is viewed as a representation of the motives for naming. These motives encompass a range of factors that operate within the nominative context, compelling the individual to make particular choices. Each motivating factor combines many detailed aspects. The motivating factor *Appearance of plants* consists involves such features: colour, shape, size of plant or its parts (flowers, leaves, root), similarity to other plants, etc. The factor *Properties of plant* assumes various motives for plant naming related to their physical and functional properties: smell, taste, tactile sensation, vegetative properties, blossoming and harvest time, healing, positive and negative properties, etc. (Dębowski & Waniakowa, 2019). The *Place of occurrence of plants* can refer to their geographic distribution, place of origin or growth, habitat. *Usage of plants* implies applying them in the household, using for food or fodder.

In most cases, scientific plant names combine several motives in the generic name and the specific epithet.

LAT/UKR: Appearance of plants + Appearance / Place of occurrence of plants / Common epithet

a) Appearance of plants + Appearance of plants

Rhinanthus major – Дзвінець великий (European yellow rattle)

Lat. *rhinanthus* is derived from two Greek roots: *ρίς, ρίνος* (*rhis, rhinos*) "nose" and *άνθος* (*anthos*) "flower": the name is motivated by the shape of the corolla with elongated upper lip (Gledhill, 2008). The specific epithet *major* is comparative degree of *magnus, a, um* "great, large" – the plant can reach a height of 80 cm.

Ukr. дзвінець < Proto-Slavic *zvonyъ, derived of *zvонъ "bell": the name is motivated by the shape of the plant's flower (Melnychuk *et al.*, 1982).

Stellaria media – Зірочник середній (Common chickweed)

Lat. *stellaria* is derived from the word *stella*, *ae f* “star” due to the shape of its flowers (Gledchill, 2008). The specific epithet *medius*, *a, um* “mid-sized, intermediate” indicates the size of the flower.

Ukr. зірочник < зірка, зірочка “star”; the name is also motivated by the flower shape (Melnychuk *et al.*, 1982).

Chenopodium album – Лобода біла (Bacon-weed)

Lat. *chenopodium* is compounded by two Greek roots: *χην* (*khen*) “goose” + *πούς* (*pous*) “foot, paw”: the leaves of some species of the plant resemble a goose’s foot (Gledchill, 2008). The specific epithet *albus*, *a, um* “white” is used because the leaves of this species are mealy in appearance, with a whitish coat on the underside.

Ukr. лобода is motivated by the same feature and comes from **elboda*, related to Lat. *albus* “white”, Greek *ἀλφός* “white rash”, Indo-European **albho* “white” (Melnychuk *et al.*, 1982).

Melandrium album – Куколиця біла (White campion).

Lat. *melandrium* is borrowed from Greek. Some researchers derive it from Greek *melandryon* “black core of oak” < *melas* “black” + *drys* “oak” (Genaust, 2017), others – from *melas* “black” + *andros* “anther” (Gledchill, 2008).

Ukr. куколиця is a derivative of *кукіль*, the name is transferred from another plant *Agrostemma githago*; perhaps is motivated by the similarity of plants. Plants named *кукіль* resemble it by the shape of the flowers or cups (the *кукіль* comes from Proto-Slavic **kolkolъ*, **kolkolъ* “bell”: the shape of the flower resembles a bell) (Melnychuk *et al.*, 1982).

Ipomoea hederacea – Кручені паничі плющові (Ivy-leaved morning glory).

Lat. *ipomoea* is borrowed from the Greek, where it was compounded from two roots: *ιπς*, *ιπος* (*ips*) “worm” + *ῥμοιος* (*hómoios*) “similar, resembling”: plant has twining stems resembling worms (Gledchill, 2008). The specific epithet

hederaceus, *a, um* “ivy-like, resembling hederaceus” points out the similarity with leaves of ivy.

Кручені паничі is a specifically Ukrainian figurative metaphorical name due to the inflorescence of the plant (Sabadosh, 2014).

Bifora radians – Біфора промениста (Wild bishop)

Lat. *bifora* came from the adj. *biforus* “bi-folded, double” (about doors, window) < *bi-* “two-” + *foris* “door”: plant has globular, didymous fruits (Genaust, 2017). The specific epithet *radians* derived from Latin *radius*, *i m* “ray”, because the inflorescence is an umbel with 5-7 rays. Ukr. *біфора* is borrowed from Latin.

b) LAT/UKR: Appearance of plants + Place of occurrence of plants

Equisetum arvense – Хвощ польовий (Horse-tail)

Lat. *equisetum* is formed by compounding two Latin roots: *equus* “horse” + *saeta* “bristle”: plant’s twigs resemble a horse’s tail (Gledchill, 2008). This motivational factor determined plant’s name in many other languages, in particular in Ukrainian: the word *хвощ* comes from the Proto-Slavic **xvostjъ* “tail” (perhaps also “broom”) (Melnychuk *et al.*, 1982). The specific epithet adj. *arvensis*, *e* “growing in or pertaining to cultivated fields” from *arvum*, *i n* “ploughed land, field” (Vaan, 2018) refers to the place where the plant grows.

Portulaca oleracea – Портулак городній (Common purslane)

Lat. *portulaca* is derived from *portula* “small door” < *porta*, *ae f* “door, gate” + diminutive suffix *-ula* because of the door-like opening of the seed capsule (Genaust, 2017). The species epithet *oleraceus*, *a, um* < *olus*, *oleris n* “vegetable” indicates the habitat: the plant grows as a weed in vegetable gardens and in grain crops. Ukr. *портулак* is borrowed from Latin.

Brachypodium sylvaticum – Куцоніжка лісова (False-brom)

Lat. *brachypodium* is derived from Greek *βραχύς* (*brachys*) “short” and *πόδιον* (*podion*) “a little foot”; plant’s name is motivated by a

short spikelet stalk (its pedicles 1-2 mm long) (Gledchill, 2008). The specific epithet *sylvaticus*, *a, um* “wild, growing in or pertaining to woods or forests” derived from *sylva*, *ae f* “forest, wood” indicates where the plant grows.

Ukr. *куцоніжка* is a calque from Latin: *ку-* “short” + *ніжка* “a little foot” (Melnychuk *et al.*, 1982).

Calamagrostis epigejos – *Куничник наземний* (*Wood small-reed*)

Lat. *calamagrostis* came from the Greek *καλαμάγρωστις*, derived from *κάλαμος* (*kalamos*) “reed” and *ἄγρωστις* (*agrostis*) “a kind of grass”; motive for naming is the similarity of these plants. The specific epithet *epigejos* *ἐπίγειος* “on the earth, earthly” derived from *ἐπί* (*epi*) “on, upon” and *γῆ* (*ge*) “earth” – unlike reeds, bush-grass grows on the ground.

Ukr. *куничник* is derived from *куниця* “panicle of reed”; it’s motivated by similarity of plants inflorescences (thick panicle) (Melnychuk *et al.*, 1982). I.V. Sabadosh (2014) also gave another version of the motivation, according to which the word is derived from *куниця* meaning “marten”: plant’s inflorescence resembles a marten’s tail.

c) LAT/UKR: *Appearance of plants + Common epithet*

It should be noted that among common specific epithets, Lat. *vulgaris*, *e* “common, usual, ordinary” and Ukr. *звичайний* is the most frequently used, which can be considered as a general characteristic of the plant since it does not indicate any specific features.

Echium vulgare – *Синяк звичайний* (*Viper’s bugloss*)

Lat. *echium* came from Greek *ἔχιον* (*ekhion*), derived from *ἔχιδνα* (*ékhis*) “snake, viper” with the diminutive suffix *-ιον* (*-ion*). Most researchers believe that the plant got its name because of the resemblance of the fruit or flower to the head of a snake (Genaust, 2017), besides, it was used in folk medicine for snake bites (Gledchill, 2008).

Ukr. *синяк* is motivated by colour of the flower: *синій* “blue”.

Cyclachaena xanthifolia – *Чорнощир звичайний* (*Giant sumpweed*)

Lat. *cyclachena* is formed by compounding two roots: *cycl-* “round” < Greek *κύκλος* (*kyklos*) “circle” + *achaenium* “achen”, referring the shape of the plant’s fruits. The specific epithet *xanthifolia* < *xanthium* “cocklebur” + *-folius*, *a, um* “-leafed” (*folium* “leaf”) was given due to the similarity of the plants’ leaves (Gledchill, 2008).

Ukr. *чорнощир* also consists of two roots: *чорно-* “black” (refers to the colour of the achenes) + *щир* < Proto-Slavic **ščirъ* (as in the word *щириня*).

Erodium cicutarium – *Грабельки звичайні* (*Common stork’s-bill*)

Lat. *erodium* came from Greek *ἐροδιός* (*erōidiós*) “heron” due to the resemblance of the elongated fruits of the plant to the heron’s beak (Gledchill, 2008). The specific epithet *cutarium*, *a, um* “hemlock-like” < *cicuta* “hemlock”: plant’s leaves resemble hemlock.

Ukr. name *грабельки* < Proto-Slavic **grab’lky* derived from *grabljě* “rake”; the plant could get its name due to the similarity of the stem to the rake handle and fruits with peduncles to the rake teeth (Melnychuk *et al.*, 1982).

Capsella bursa-pastoris – *Грицики звичайні* (*Shepherd’s purse*)

Both the generic name and the specific epithet characterise the shape of the fruits. The first name *capsella* is a diminutive to Latin *capsa* “box, case”, and the specific epithet consists of two Latin words: *bursa* “bag” and genitive form of *pastor* (*Gen. pastoris*) “shepherd” – triangular fruits of the plant resemble a shepherd’s purse.

There is no single point of view regarding the origin of the Ukrainian name of the plant. According to one version, *грицики* is a result of the modification of the name *гречка* “buckwheat” due to its convergence with the male name *Грицик*, perhaps under the influence of the form *гришка* “buckwheat”, which comes

from Moldovan *хришкэ* “idem” (Melnychuk *et al.*, 1982; Kosolap *et al.*, 2022). I.V. Sabadosh (2014) believes this point of view is unconvincing and considers, that the name is determined by the flowering time of this plant during the Christian holiday of St. Gregory.

Linaria vulgaris – льонок звичайний (Common toadflax)

Lat. *linaria* is derived from adj. *linarius*, *a, um* “flax-like, linen” < *linum*, *i n* “flax”: because of the similarity of the narrow-lanceolate leaves of plants.

The Ukrainian plant’s name is also motivated by the same factor – similarity of the plants’ leaves: льонок < льон “flax”.

LAT/UKR: Properties of plants + Properties / Appearance / Place of occurrence of plants / Common epithet

a) LAT/UKR: Properties of plants + Properties of plants

Carduus nutans – Будяк пониклий (Nodding thistle)

Lat. *carduus* is derived from *carrere* “to scratch”, related to Proto-Indo-European **kars-* “to scratch, scrape, rub” – the plant has sharp spines (Genaust, 2017). Cf.: Sanskrit कर्शति “scratches”, German *harsh* “hairy”, Old Slavic *krasta*, Lithuanian *karsiu* “to comb”. The specific epithet *nutans* “drooping, nodding” < *nuto*, *nutare* “droop, sway, swing” is given to the plant because the flower heads slop downwards.

Ukr. будяк < Proto-Slavic **bodakъ*, derived from **bodti* “to stab”; (form with *бы-* is obviously the result of deetymologisation) (Melnychuk *et al.*, 1982). The standard motivator for the negative assessment of touch in many Ukrainian folk names of plants is будяк “thistle”, given in explanatory dictionaries as a “thorny herbaceous plant-weed”. The stem of the noun будяк in the plant names, especially those that do not belong to the genus *Carduus* in botanical classification, is a motivator for a negative assessment of tactile sensations, since in the view of native speakers будяк “thistle” is associated with prickly properties (Usyk, 2017).

Urtica dioica – Крпива двудомна (Common nettle)

Lat. *urtica* is derived from verb *uro*, *urere* “to burn”, the plant’s leaves and stems are covered by many hairs, which produce a stinging sensation upon contact. The specific epithet *dioicus*, *a, um* comes from Greek *δίοικος*, meaning “of two houses” < *δῖς* (*dís*) “twice” + *οἶκος* (*oîkos*) “house”, *urtica* has male and female reproductive organs (stamens and pistils) on separate plants (Gledhill, 2008).

Ukr. крпива < Proto-Slavic **kropiva* (*ko-priva*), derived from **kropiti*. There are two versions of motivation: the plant has previously been doused with boiling water before using as fodder for cattle (cf. Old Slavonic *oukropъ* ‘boiling water’, Ukr. *okríp*) or the connection with **kropiti* is motivated by property of nettle to sting, burn – as if by small splashes) (Melnychuk *et al.*, 1982).

Datura stramonium – Дурман звичайний (Thornapple)

Lat. *datura* is borrowed from Hindi धतुरा (*dhatūrā*) and Sanskrit *dhattūra* “drug”, related to Arabic *datora* < Persian *tatula*, derived from *tat* “to prick” – the plant has prickly fruits covered with thorns. The origin of the specific epithet *stramonium* is unclear. H. Genaust (2017) questioned the common version regarding the origin of the word from the Greek roots *σπέρχνο*s (*strychnon*) “nightshade” and *manikon* “madness”, although the consumption of the fruit causes delirious and excited states; some researchers associate it with Tatar *turman* “remedy for horses” (Gledhill, 2008).

That same word is also associated with origin of Ukr. дурман, which, according to one version, is considered to be borrowed from the Turkish languages: Tatar, Bashkir *turman* “remedy for horses”, *dermān* “medicine, drug” < Persian *dārman* “medicine, potion”; according to another – it derived from the stems *дурний* “stupid, fool”, *одуряти* “make foolish, befuddle” due to the poisonous properties of the plant (Melnychuk *et al.*, 1982). I.V. Sabadosh (2014)

believes that the name is motivated by the poisonous, unpleasant, dizzying smell of the plant. L. Usyk (2017) also leans towards this version: productive in Ukrainian phytonyms is a motivator, expressed by the stems of the words *дур*, *дурний* in the sense of “mad, insane” or “dizziness”. The motivation in the examples with this motivator can be related to several factors, one of which is the intense smell of the plant, which when inhaled for a long time causes unpleasant symptoms: dizziness, headache and nausea.

b) LAT/UKR: *Properties of plants + Appearance of plants*

Amaranthus albus – Щиріця біла (Common tumbleweed)

Lat. *amaranthus* came from Greek *ἀμάραντος* (*amarantos*) “unfading” (*a-* “negative prefix” + *μαραίνω* (*marainein*) “decay, die away, wither”) which was contaminated with the word *άνθος* (*anthos*) “flower”: the plant has flowers that can keep their shape for a long time (Genaust, 2017). The specific epithet *albus*, *a*, *um* “білий” indicates that this species has whitish stems and inflorescences.

As I.V. Sabadosh (2014) notes, in Ukrainian, most species of the genus *amaranthus* are denoted by the word *щиріця*, derived from the plant name *щир* < Proto-Slavic *ščirъ.

Aegilops cylindrica – Егілонс циліндричний (Jointed goatgrass)

Lat. *aegilops* came from Greek *αἴγυλος* “a kind of oat, barley weed, haver-grass”, derived from Proto-Indo-European *h₂eyǵ-, from where Greek *αἴζ* “goat” (Gledhill, 2008): animals like this herb. H. Genaust (2017) gives a slightly different explanation: from Greek *aix*, *aigilos* “grass” and *αἴζ* (*aix*) “goat”: the plant was considered a remedy for eye ulcers in goats. Specific epithet *cylindricus*, *a*, *um* “cylindrical” < Latin *cylindrus* < Greek *kylindros* “cylinder, roller” is given to the plant because of the elongated-cylindrical spikelets. Ukr. *егілонс* is borrowed from Latin.

Hyoscyamus niger – Блекота чорна (Black henbane)

Lat. *hyoscyamus* is a borrowing from Greek *ὑοσκιᾶμος* (*huoskiamos*) “hog bean”, compounded from two stems: *ὑς* (*hús*) “hog, pig” + *κιᾶμος* (*kúamos*) “bean”. The plant’s fruits resemble beans and cause convulsions in pigs, but according to another version pigs, on the contrary, are supposedly immune to the toxic effect of the fruits (Genaust, 2017). There is also a version that *ὑς* “hog, pig” is derogatory name, as the plant is poisonous (Gledhill, 2008). The specific epithet *niger*, *gra*, *grum* is given due to the dark colour of the seeds.

Ukr. *блекота* is obviously related to *блекотати* “to babble, to speak indistinctly” < Proto-Slavic **blekotati*, *blekati* “idem” of onomatopoeic origin (Melnychuk *et al.*, 1982). The name is due to the poisonous properties of the plant.

c) LAT/UKR: *Properties of plants + Place of occurrence of plants*

Cuscuta campestris – Повитиця польова (Field dodder)

Most researchers believe that Lat. *cuscuta* (and variants: *cuscūtha*, *cuscūte*, etc.) come from Arabic *كوشك* (*kušūl*), related to Aram. *ܟܫܬܐ* (*kāšā*), probably from *ܟܫܐ* (*kašā*) “to pile up” (this parasitic plant clings to trees), or from Akkadian *kasû* “a plant whose seeds are used for spices and medicine”. H. Genaust (2017) also believes that the Arabic *kušūla* is related to Greek *kadytas* “parasitic plant”. The specific epithet *campester*, *stris*, *stre* derives from Lat. *campus*, *i m* “pasture, field” and refers to the place where the plant grows.

Ukr. *повитиця* derives from the verb *витуся* “to climb”: the name is due to the fact that this plant climbs up other plants (Melnychuk *et al.*, 1982).

Erigeron canadensis – Злінка канадська (Canadian horseweed)

Lat. *erigeron* came from Greek *ἐριγέρων* (*erigerōn*) formed by compounding: *ἔρι* (*éri*) “early in the morning” + *γέρων* (*gérōn*) “old”, which is motivated by the appearance of grey down on the fruits shortly after flowering or the

early appearance of seed heads (Genaust, 2017). The specific epithet *canadensis* indicates plant's native area – North America.

Ukr. *злинка* is obviously related to *зло, злий* “evil”, because this plant litters the fields (Melnychuk *et al.*, 1982).

Heliotropium europaeum – Геліотрон європейський (*European heliotrope*)

Lat. *heliotropium* is borrowed from Greek *ἡλιότροπιον* (*heliotropion*), formed by compounding stems *ἥλιος* (*hēlios*) “sun” and *τροπεῖν* (*tropēin*) “to turn”. The name motivated by the fact, that during the day the flowers turn to follow the sun (Genaust, 2017). The specific epithet *europaeus, a, um* refers to the geographical distribution of plant. Ukr. *геліотрон* is borrowed from Latin.

Eryngium campestre – Миколайчики польові (*Field eryngo*)

Lat. *eryngium* came from Greek *ἑρύγγιον* (*ērūngion*) “thorny plant” – the name originated from the description of spiny-leaved plant by Theophrastus (Gledhill, 2008).

Ukr. plant's name *миколайчики* is obviously borrowed from the Polish: *mikołajki, mikołajek* < proper name *Mikołaj*; the motivation of the name is unclear (Melnychuk *et al.*, 1982). According to I.V. Sabadosh (2014), there are no sufficient grounds to consider this botanical name borrowing from Polish; the word *миколайчики* is formed from *миколайки*, derived from *Миколай* (or directly from the proper name *Миколай*), motivation: the plant stands in the field despite the frost, during the winter Christian holiday of St. Nikolay.

Cirsium arvense – Осом польвовий (*Creeping thistle*)

Lat. *cirsium/cirsion* “kind of thistle” comes from Greek *κίρσιον* (*kirsion*): the name is motivated by the properties of the plant, which was used in the treatment of varicose veins < *κίρσος* “varicose veins” + diminutive suffix *-ιον* (Genaust, 2017).

Ukr. *ocom* < Proto-Slavic **osztъ* with root *os* “sharp” < Indo-European **ak-* “sharp”; cognate

to Lithuanian *āšutas, āšutai* “hair, horse hair”, Latin *acus* “needle”, Greek *ἄκανος* “thistle”: the plant has spiky prickly leaves (Melnychuk *et al.*, 1982).

Convolvulus arvensis – Берізка польова (*Field bindweed*)

Lat. *convolvulus* derives from the verb *convolvere, ēre* (Gledhill, 2008), formed with prefix *con-* “with, together” and the verb *volvo, ere*, “to twist, turn” – this weed entwine and wraps around other plants.

Ukr. *берізка* is suggested to be derived from **berz-* < **ob-verz-* “to entwine” (Melnychuk *et al.*, 1982). I.V. Sabadosh (2014) considers that this phytomenon is a result of the reinterpretation of diminutive *березка* (*берізка*) ‘small birch’ due to similarity of these plants’ leaves.

Orobanchе cumana – Вовчок соняшниковий (*Sunflower broomrape*)

Lat. *orobanche* comes from Greek *οροβάχχη*, formed by compounding *οροβος* (*orobos*) “bitter vetch, chickpea” + *ἄγχω* (*agchein*) “strangle”, the name is motivated by the fact that the plant is often parasitises legumes (Gledhill, 2008). The specific epithet *cumana* (*cumanus, a, um*) derives from the name of the ancient city of Cuma on the Apennine Peninsula, perhaps, native place of the plant.

For Ukr. plant's name I.V. Sabadosh (2014) cites an analogy with *вовчок*, “cabbage weevil, cockchafer larva”, all these insects are major pests in agriculture that eat roots, fruits and grain, and got their name from a predatory wolf (*вовчок* < *вовк* here means “little wolf”; parasitic plants are also pests).

d) LAT/UKR: Appearance of plants + Properties of plants

Agropyron repens – Пупій новзучий (*Couch grass*)

Lat. *agropyron* (*agropyrum*) is derived from Greek *ἀγρός* (*agros*) “field” and *πυρός* (*pyros*) “wheat”, perhaps referring to a weed resembling wheat (Genaust, 2017). The specific epithet *repens* “creeping” is a present active participle of present active participle of *repo, ēre* “to

creep, crawl” and given because the plant has long creeping rhizome.

Ukr. *nupii* comes from Proto-Slavic **pyrǫ*, **pyrǫbъ*, **pyro* “spelt” and also related to Greek *πυρός* (*pyros*) “wheat” (Melnychuk *et al.*, 1982).

Digitaria ischaemum – Пальчатка звичайна (*Smooth crabgrass*)

Lat. *digitaria* is derived from *digitus*, *i m* ‘finger’ due to the radiating spikes, finger-like shape of the panicle (Gledhill, 2008). The specific epithet *ischaemum* is formed from Greek roots: *ischo* “to stop” and *haema* “blood”: the plant has haemostatic properties.

Ukr. *пальчатка* is derived from the *налець* “finger”, probably calque of Latin *digitaria* (Melnychuk *et al.*, 1982).

e) LAT/UKR: *Properties of plants + Combination of factors*

Apera spica-venti – Метлюг звичайний (*Common windgrass*)

Lat. *apera* derives from Greek *aperos* “intact, unmutilated” each spike has at least a second flower stalk, whereas other *Agrostis* species do not (Genaust, 2017). The specific epithet *spica-venti* consists of two words: *spica*, *ae f* “ear” and the genitive form of *ventus*, *i m* “wind” – the plant has thin stems, spreading panicles that sway from the breath of the wind, grains very small and crumble easily.

The Ukrainian name *метлюг* is derived from *мимла* “broom, panicle” due to the shape of the inflorescence (Melnychuk, 1982).

Consolida regalis – Сокирки польові (*Forking larkspur*)

Lat. *consolida* derives from the verb *consolido*, *are* “to make solid, strengthen” (adj. *solidus*, *a, um* “solid”): the name was given to the plant due to its healing properties, it was believed to help heal wounds (Genaust, 2017). Specific epithet *regalis*, *e* “royal” < Latin *rex*, *regis m* “king”: this epithet was often given to plants for characteristics of the highest degree (colour, shape, size) by general aesthetic impact.

Ukr. *сокирки* (plural of *сокирка* “small axe”) – the flowers resemble small axes due to the

elongated upper leaf of the perianth in the spur or shape of the fruit (Melnychuk *et al.*, 1982).

The considered patterns of weed scientific names’ formation, in which a generic name was motivated by the appearance or properties of the plants, turned out to be the most productive in both Latin and Ukrainian languages. The specific epithets, meanwhile, were more diverse.

LAT/UKR: Usage of plants + Properties / Appearance / Place of occurrence of plants / Common epithet

Galium aparine – Підмаренник чіпкий (*Cleavers*)

Lat. *galium* is borrowed from the Greek *galaion*, derived from *γάλα* (*gala*) “milk” – previously, the flowers were used to coagulate milk in the production of cheese (Gledhill, 2008). The specific epithet is expressed by a noun *aparine* < Greek *ἀπαρίνη* (*aparine*) “clinging, seizing”, derived from the Greek *απαίρω* “lay hold of, seize”, itself coming from *από* “from” + *αίρω* “pull to lift”.

Ukr. *підмаренник* is obviously derived from the name of other plant *марена* (*Rubia*). Proto-Slavic *marěna* is cognate with *marati* “to pollute” due to the ability of the rhizomes of plants of the family Rubiaceae to dye in various colours (Melnychuk *et al.*, 1982). Previously, a red dye for fabrics was obtained from the roots of this plant. The specific epithet *чіпкий* points out that the stems and leaves of the plant are covered with small spines, and the fruit is covered with hooked bristles.

Melilotus officinalis – Буркун лікарський (*Sweet yellow clover*) (Svystunova *et al.*, 2024)

Lat. *melilotus* (*mēlilōtos*) comes from Greek *μελίλωτος* (*melilōtos*), formed by compounding *μελι* (*meli*) “honey” + *λωτός* (*lōtos*) here means “clover”. This name is motivated by the fact, that it’s a good honey plant. The specific epithet *officinalis*, *e* < *officina*, *ae f* “workshop, pharmacy” indicates using plant in medical practice. Ukr. *буркун* is a loanword from Turkish languages (Melnychuk *et al.*, 1982).

Xanthium spinosum – Непреба колюча (*Cocklebur*)

Lat. *xanthium* is borrowed from Greek *ξανθιον* (*xanthion*), derived from *ξανθός* (*xanthos*) “yellow” + diminutive suffix *-ιον*, because it was used for dyeing the hair yellow (Gledhill, 2008). The specific epithet is *spinosus*, *a*, *um* “spiny” < *spina*, *ae f*, because this plant has long and sharp spines.

Ukr. *нетреба* is obviously the result of the substantivisation of *нетрѣбѹи* “unworthy” related to *трѣбѹи* “needed, necessary”; the name is obviously due to the fact that *нетреба* is a weed that should be fought (Melnychuk *et al.*, 1982).

Anchusa officinalis – *Воловик лікарський* (*Common bugloss*)

Lat. *anchusa* is derived from the Greek *ἄγκουσα* (*anchousa*, *agchousa*, or *egchousa*) – the name for plants from which rouge and other cosmetic paint was made (cf. Greek *egchousizein* “to put on rouge”). Its infusion was also used to kill parasites (Genaust, 2017). The specific epithet *officinalis* indicates using plant in medical practice.

Ukr. *воловик* is the result of the semantic condensation of word combination *ox's tongue*. The name is explained by the similarity of the plant's leaf to an ox's tongue (Sabadosh, 2014) or the red colour of its root (Melnychuk *et al.*, 1982). The results of a quantitative analysis of factors determining semantic motivation for plant names in Latin and Ukrainian are given in Table 1.

Table 1. Percentage proportions of factors determining the semantic motivation of scientific plant names

Semantic motivation of plant names	Latin		Ukrainian	
	Generic name	Specific epithet	Generic name	Specific epithet
appearance	47%	44%	42%	37%
properties	43%	17%	38%	17%
place	-	15%	2%	16%
usage	5%	2%	3%	2%
other	5%	22%	15%	28%

Source: created by the author

Quantitative analysis showed that among the factors determining the semantic motivation of the names of weeds, the appearance of the plant predominates in both languages. The results of the study were in line with the findings of recent research, particularly in the field of cognitive linguistics. Having studied the names of medicinal plants in Romance, Germanic and Slavic languages, N. Panasenko (2021) claimed that the starting point of human cognitive activity is obtaining the primary information via visual, tactile, olfactory, gustatory, and acoustic channels. One of the peculiar properties of phytonyms is the reflection of various channel combinations in the plant names, with the undoubted priority of vision as the most important information processing channel. The priority of the visual channel can be explained by the fact that it allows us to

identify numerous and diverse signs of objects of the outside world: colour, size, shape, location in space.

These findings apply not only to medicinal plants but also to weeds. Most weed names are motivated by the appearance of the plants due to the priority of vision as the most important information processing channel. L. Usyk (2017), having compared the semantics of the names of medicinal plants in the Germanic and Slavic languages, came to the conclusion that in the process of plant naming, priority is given to propositional-dictum motivation, which fixes true knowledge about the object of nomination in the plant name, while the evaluative component is auxiliary and clarifying. In the case of choosing a motivational feature for naming a plant at the first stage, which involves obtaining information about the plant, the motivators

belong to the modus type and are mainly associated with sensory evaluations.

P. Dębowiak & J. Waniakowa (2019) believe the semantic motivation of phytonyms is the basis of the nomination mechanism in various European languages and their dialects. Plant names are motivated by several general features: their appearance, properties, place of occurrence, usage and other motivations. Among them, the most prevalent seems to be the one related to the appearance of plants and their most characteristic features. In the mentioned work, the authors focused on such characteristics as colour in the motivation of plant names. Other works also studied such motives for plant naming as size, by N. Panasenko (2024) and shape by A.J. Urniaż (2021).

Many names of weeds in Latin and Ukrainian are formed by secondary indirect designation, revealing the same mechanisms of metaphor and metonymy as other plant names (Panasenko, 2021; Kravchenko *et al.*, 2022). Another common factor, determining the semantic motivation is the properties of plants. It should be noted that many weeds are used in folk medicine, and are attributed with healing properties. An important remark in this case is the comment, that with regard to phytonyms, as in any nomination process that reflects a person's perception of reality, what is important are not so much the real, objective properties of the referent as those attributed to it by the naming subject (and which may, but not necessarily, coincide with the former) (Buława, 2023).

Some scholars consider this factor of semantic motivation to be decisive. A. Szwa-jczuk (2023), through a contrastive analysis of scientific and common names of ornamental plants in Latin, Polish and English, concluded that most names have been derived from plant's presumed properties. In terms of equivalence between Latin, English and Polish plant names, partial one prevails (total or zero equivalence is rare), as in this study. The fewest names of weeds are motivated by their use, which is due

to the specificity of the plants themselves.

Thus, most researchers recognise in the names of different groups of plants (medicinal, cultivated, ornamental, etc.) a semantic motivation with the priority of factors carrying sensory information: visual, tactile, olfactory, gustatory. This finding is confirmed in the case of scientific names of weeds, motivated primarily by their appearance and properties.

Conclusions

The scientific names of plants in Latin and Ukrainian are motivated multitude of common characteristics, such as plant appearance, properties, place, use and other. In both languages (Latin – 47%, Ukrainian – 42%), generic names of weeds motivated by their appearance prevail. They are often determined by such characteristics: shape of plant/its part (Lat. *conium*, *trifolium*, *chenopodium*, *capsella*, *bifora*, *cyclachena*, *portulaca*; Ukr. *сокирки*, *тонконіг*, *жабрій*, *куколиця*, *куряті очки*, *плоскуха*, etc.); colour of plant/its part (Ukr. *синяк*, *чорнощир*, *лобода*); appearance of inflorescences (Lat. *apera*, *echium*, *digitaria*, Ukr. *метлюг*, *пальчатка*) or of whole plants (Lat. *equisetum*, Ukr. *хвоц*, *грабельки*, *кудрявець*); similarity to other plants (Lat. *bromus*, *cenchrus*, *atriplex*, *glechoma linaria*, Ukr. *липка*, *березка*, *пирій*, *сиріниця*, *рутка*, *льонок*, etc.).

Generic names motivated by properties of plants are most often determined by such features: tactile sensation (Lat. *carduus*, *datura*, *eryngium*, *urtica*; Ukr. *будяк*, *волошка*, *осот*); specific vegetative properties (Lat. *erigeron*, *heliotropium*, *amaranthus*; Ukr. *розхідник*, *миколайчики*); blossoming time (Ukr. *грицики*, etc.); taste (Ukr. *гірчак*, *хрінниця*); negative properties (Lat. *lolium*; Ukr. *болиголов*, *блекота*, *дурман*, *злінка*, etc.); positive properties (Lat. *melilotus*, etc.) A fairly large group consists of names motivated by healing properties of plants; the nomination is based on both common perceptions about their restorative properties or using in the treatment of specific diseases (Lat.

consolida, cirsium, matricaria, Ukr. загойник, гу-
кавка, жабрій).

The usage of plants as a motivational factor is quite rare in both languages (Latin – 5%, Ukrainian – 3%) and is determined by applying them in the household, using for food or fodder (Lat. *cirsium, galium, anchusa*: Ukr. канатник, підмаренник, конюшина, etc.). Other factors influencing semantic motivation of plants are commemoration (*berteroa, descurainia, galinsoga*), borrowing from other languages. Among specific epithets, the most significant are the motivational factors associated with the appearance of the plant: colour of plant/its part (Lat. *niger, albus, incanus*, Ukr. білий, чорний, цій, etc.), shape of plant/its part (Lat. *cylindricus, tetrahit*, Ukr. пальчастий, трійчастий, etc.); size and number of plant parts (Lat.

pauciflorus, parviflora, Ukr. малоквітковий, дрібноквітковий, etc.), similarity to other plants (Lat. *artemisifolius, xanthifolius, hederaceus*). This research paper did not exhaust all aspects of the problem; promising areas for further research are to determine the factors motivating the scientific plant names of other thematic groups as well as to increase the number of languages for comparison.

Acknowledgements

None.

Funding

None.

Conflict of Interest

None.

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Чинники семантичної мотивації наукових назв рослин

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Анотація. Наукові назви рослин є цінним пластом лексики для вивчення категоризації як процесу вербалізованого впорядкування знань про довкілля, специфічних для кожного варіанта наукової та мовної картин світу. Метою статті було проаналізувати фактори, що визначають семантичну мотивацію наукових назв бур'янів у латинській та українській мовах. У дослідженні використано етимологічний і семантичний аналіз фітонімів, зіставний метод та узагальнення. Матеріалом слугували 100 біномінальних назв рослин, отриманих у результаті суцільної вибірки з довідника бур'янів. У статті наведено продуктивні моделі творення наукових назв рослин у латинській та українській мовах, проаналізовано основні мотиви називання рослин в обох мовах. Дослідження продемонструвало, що наукові назви рослин в обох мовах мотивовані комбінацією кількох загальних аспектів, як-от: зовнішній вигляд, властивості, місце зростання, використання рослин тощо, зафіксованих у родовій назві та видовому епітеті. Отримані результати підтвердили висновки сучасних досліджень про те, що в основі механізму номінації лежить семантична мотивація фітонімів, зумовлена вибором мотиватора із зони інформації переважно про зовнішній вигляд (форму, колір, розмір, подібність рослин чи їхніх частин) та властивості (смак, запах, тактильні відчуття, позитивні чи негативні властивості). Результати дослідження можуть бути використані у підготовці фахівців різних спеціальностей галузі знань «Аграрні науки та продовольство»

Ключові слова: найменування рослин; мотиви номінації; фітоніми; родова назва; видовий епітет; етимологія; латинська мова; українська мова



Exchange as a means of effective foreign language learning

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Abstract. The aim of the study was to identify the characteristics of the student exchange method for learning foreign languages, namely English and German, in Ukraine, taking into account its impact on students' language competence. The methodology included such methods as a comparative analysis of the Erasmus+ and Deutscher Akademischer Austauschdienst exchange programmes, as well as an analysis of digital technologies such as Coursera, Khan Academy, EdTech, Tandem, and Speaky to improve the quality of learning and provide additional tools for language immersion, practical exercises, and communication between students and native speakers. It was found that the difference between the Erasmus+ and Deutscher Akademischer Austauschdienst programmes in the study of grammar lies in their approaches to integrating grammatical topics into the learning process. The Erasmus+ programme places greater emphasis on the communicative method, which focuses on using language in real-life situations and allows students to improve grammatical skills through context. Meanwhile, the Deutscher Akademischer Austauschdienst programme, although it employs a communicative approach, places more emphasis on the grammar-translation method, which involves a detailed study of grammatical rules and their application through translation and text analysis. The impact of academic mobility on students' adaptability, their ability to quickly master new material, and their capacity to use the language in authentic communicative situations was examined. Exchange,

Suggested Citation:

Kudryk, K., & Lazarenko, T. (2024). Exchange as a means of effective foreign language learning. *International Journal of Philology*, 29(1), 23-41. doi: 10.31548/philolog/1.2025.23.

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as a method of effective foreign language learning, proved successful due to the combination of theoretical knowledge with practical tasks, which contributed to the development of intercultural communication. Students who participated in exchange programmes achieved better test results, overcame language barriers more rapidly, and demonstrated a higher level of academic success, confirming the effectiveness of combining traditional learning with practical experience. The practical significance of this work lies in substantiating student exchange as a method of foreign language acquisition and in developing recommendations for integrating traditional learning with practical tasks and digital technologies to enhance students' language competence

Keywords: educational process; international mobility; cultural exchange; intercultural competence; digital technologies

Introduction

The relevance of studying exchange as a method of foreign language learning stems from the need to enhance teaching approaches that align with the requirements of communicative competence. In particular, proficiency in foreign languages is a key factor in both personal and professional development. Exchange, as a pedagogical method, enables the creation of conditions for the practical application of language skills, thereby facilitating the assimilation of material through real-life communication and interaction with native speakers. Investigating this method is essential for improving the process of foreign language acquisition and enhancing the quality of education in the context of international integration. Furthermore, the study of exchange as a method of foreign language learning in Ukraine is particularly pertinent due to the need to raise the quality of language education amid globalisation and the country's integration into the European educational space. The increasing demand for international student mobility and the necessity of engaging with foreign partners require a high level of foreign language proficiency. Within this context, exchange programmes become crucial for the development of language skills, as they not only enhance linguistic knowledge but also promote cultural exchange – an important factor in developing intercultural competence among Ukrainian students.

The issue of exchange in education has been explored by various scholars, who have analysed its impact on the development of students' linguistic, intercultural, and life skills. One study, for instance, focused on the influence of multicultural exchange on the development of life skills in future English teachers. F. Altınay *et al.* (2024) found that such exchanges contributed not only to the enhancement of language competence but also to the broadening of students' intercultural understanding. K. Cantez & C. Atar (2021) examined the contribution of the Erasmus+ programme to the process of foreign language learning. They concluded that participation in such projects improved students' language abilities and facilitated their adaptation to an authentic linguistic environment. M. Marden & J. Herrington (2020) investigated principles of effective collaboration within a blended learning environment, showing that collaborative practices supported the development of student interaction and improved communicative strategies. S. McGury & R. Klosinski (2024) explored the use of virtual exchange in foreign language instruction, noting that this approach fostered the development of global competencies and interdisciplinary learning. The authenticity and reliability of language exchange applications among adult learners were studied by M. Wardak (2024), who observed that such platforms could serve as

effective learning tools, provided they are utilised appropriately.

In their study, N. Sarnovska & Y. Rybinska (2023) explored the role of foreign languages as a means of preserving and transmitting Ukrainian national cultural values within the context of intercultural communication during wartime. The authors analysed how learning foreign languages and participating in exchange programmes contribute to strengthening cultural identity, fostering intercultural dialogue, and promoting mutual understanding between peoples in conflict situations. Through engagement in exchange programmes, students were able to interact directly with native speakers, which deepens their understanding of cultural differences and facilitates the international transmission of Ukrainian cultural values. Additionally, S. Palamar *et al.* (2023) examined the role of integrating innovative technologies – such as virtual reality (VR), augmented reality (AR), and artificial intelligence (AI) – into the process of foreign language teaching in Ukraine. Their study focused on how these technologies support students in adapting more effectively to the language environment, deepening their knowledge, and increasing their motivation during exchange programmes by providing opportunities for authentic immersion and active communication with native speakers. In particular, the study by L. Svyrydova & O. Ameridze (2023) investigated the role of virtual exchange projects in enhancing the cultural, linguistic, and digital competencies of technical students. The authors highlighted the use of virtual exchanges to foster intercultural communication and digital skills in the educational process without requiring physical student mobility.

The role of Skype exchange in intercultural learning was analysed by C. Mrowa-Hopkin (2022). The researcher found that this form of interaction helped students expand their intercultural understanding and improve language skills through authentic communication.

Skype, as a tool, enables students to engage directly with native speakers, which significantly enhances both lexical proficiency and sociocultural competence. Y. Nabeshima (2024) investigated the teaching of Japanese to students participating in short-term exchange programmes, focusing on its adaptation in accordance with the CEFR. The study determined that structured programmes facilitated more rapid immersion into the language environment. It also highlighted the importance of using authentic materials and situations to help students better navigate the cultural nuances of the Japanese language. S. Okumura (2024) examined the implementation of virtual exchanges and technology in foreign language teaching, concluding that such approaches supported the development of students' intercultural communication skills. Similarly, E. Cutrim Schmid *et al.* (2023) explored how virtual exchanges can integrate a plurilingual perspective into the teaching of English as a foreign language. Their study demonstrated that such exchanges promote the development of students' linguistic autonomy.

Although the aforementioned researchers have examined in detail the impact of language exchange and virtual learning on the development of linguistic and intercultural skills, they have not sufficiently addressed individual differences among students – particularly their cognitive styles and personal factors – which may influence the effectiveness of language exchange. Therefore, the aim of this study was to assess the effectiveness of exchange as a method of foreign language learning, specifically in the context of student interaction during language exchange. The objectives of the study were: to analyse methods of foreign language learning through exchange; to examine the impact of exchange on students' language skills; to investigate the influence of exchange on improving oral communication, the development of linguistic intuition, and the ability to improvise – all of which significantly contribute to raising the level of language proficiency; and

to identify a series of recommendations for improving existing methods.

Materials and Methods

The article analysed the participation of Ukrainian students in exchange programmes, drawing on data from official sources, specifically the INFO media platform (Exchange Programmes: What..., 2023). In particular, statistical data confirming patterns of student exchange in Ukraine – including participant numbers and host countries – were referenced in studies by R. Strutynskyi (2019), as well as reports from the National University of Water and Environmental Engineering (n.d.) and the National University “Yuri Kondratyuk Poltava Polytechnic” (2024). The influence of cultural differences on the effectiveness of language exchange was examined to identify factors that might either hinder or facilitate intercultural communication. Special attention was paid to pragmatic aspects of language use, such as polite expressions, the contextual variability of word meanings, and culturally determined communicative strategies. The relationship between students’ level of language preparation and their ability to quickly integrate into a new linguistic environment was also analysed. A comparative analysis was conducted on English and German language exchange programmes, specifically Erasmus+ and the Deutscher Akademischer Austauschdienst. Additionally, academic mobility schemes, such as bilateral exchanges and summer language schools, were examined. The comparison of English and German programmes was based on criteria including:

- duration and intensity of study (i.e., number of instructional hours, length of stay abroad, and depth of language immersion);
- teaching methodologies (e.g., communicative method, grammar-translation approach, and blended methods);
- lexical and cultural context (e.g., the nature of teaching materials and emphasis on multiculturalism versus the target culture);

➤ grammatical content (i.e., principal grammatical topics addressed during the exchange);

➤ practical application of language (e.g., opportunities for internships, practical sessions, communication with native speakers, and adaptation to the linguistic environment);

➤ funding and accessibility (e.g., financial support conditions, scholarships, and grant availability).

The advantages and disadvantages of digital technologies were also described, along with their influence on the quality of exchange experiences. Specific tools analysed included Coursera, Khan Academy, EdTech, Tandem, and Speaky, which served as supplementary instruments for language acquisition and communication. As part of the examination of exchange programme features, content analysis of student experiences abroad was conducted. Ukrainian students participated in exchanges in the USA, the United Kingdom, Germany, France, Poland, and other countries – each with distinct cultural and linguistic characteristics. Notable differences in approaches to grammar instruction were also identified.

Results

Student exchange provides immersion in a language environment and fosters the development of communication skills and intercultural competence. Participation in international programmes such as Erasmus+, bilateral exchanges, and summer language schools enables students to use the language in real-life contexts, which significantly enhances their linguistic abilities compared to traditional teaching methods. Moreover, integration into the educational process of another country broadens students’ worldviews, helps to overcome language barriers, and contributes to the development of confidence in using the target language. Students who have participated in exchange programmes typically demonstrate a higher level of language proficiency and greater

adaptability to foreign language environments, making this approach an effective tool in foreign language learning. Statistical data support the growing number of students participating in exchanges with various countries. According to a study by R. Strutynskyi (2019), the number of students involved in exchange programmes has increased steadily by 15% over the past five years, particularly with European countries such as Poland, Germany, and France, as well as with Central Asian countries, notably Kazakhstan. Countries with which Ukraine maintains academic exchange agreements play a key role in creating favourable conditions for student participation in international programmes. As noted in the report of the National University of Water and Environmental Engineering (n.d.), recent years have seen a significant rise in the number of students undertaking internships at European universities and research centres, contributing to the enhancement of their professional qualifications. Similarly, according to data from the National University “Yuri Kondratyuk Poltava Polytechnic” (2024), universities actively support student participation in international scientific conferences and forums, further promoting academic mobility. In the past year alone, the number of such participants increased by 18%.

Taras Shevchenko National University of Kyiv concluded 24 partnership agreements with higher education institutions from 14 countries in 2023, which facilitated active student participation in academic mobility programmes. According to the Rector’s Report for 2023, the university ranked 681–690 among nearly 1,500 universities worldwide in the QS World University Rankings, reflecting its strong international standing (Bugrova, 2023). Ivan Franko National University of Lviv also plays an active role in international exchange. According to the National Agency for Quality Assurance in Higher Education, it is among the top three universities in terms of the number of applications submitted

for admission, indicating its popularity among prospective students. V.N. Karazin Kharkiv National University, which ranks 510–520 in the global university rankings, also underscores Ukraine’s growing presence in the international academic landscape.

In particular, within the framework of university programmes, students had the opportunity to communicate with international peers, which encouraged the active use of new language structures and facilitated effective language acquisition. Through language exchange, students expanded their vocabulary and improved their grammatical skills. Direct communication with native speakers required them to respond quickly in conversational situations, select appropriate vocabulary, and construct grammatically correct sentences. Within language tandems, students not only memorised new words but also integrated them immediately into dialogue, which significantly enhanced their language proficiency. Beyond individual lexical items, language exchange supported the acquisition of phraseological units, fixed expressions, colloquialisms, and the contextual meanings of words. For instance, through interaction with native speakers, students encountered idiomatic expressions whose meanings could not be deduced through literal translation. An example is the idiom “break a leg”, which in spoken English is used to wish someone good luck, in contrast to its literal meaning. Such experiences enabled students to navigate linguistic nuances more effectively – an aspect difficult to replicate through textbook-based instruction.

The integration of theoretical knowledge into speech practice occurred naturally. Even with prior theoretical training, students often encountered difficulties in real-life communication due to a lack of practice. Language exchange provided them with the opportunity to apply learned constructions in authentic contexts. For example, after studying conditional

sentences, students could use them in live conversations by constructing phrases such as, “If I were you, I would do it differently”. Communication with native speakers also heightened students’ awareness of grammatical rules, vocabulary usage, and phraseology. Participants in language exchanges observed that some constructions are more prevalent in spoken language, while others are typical of formal contexts. For instance, students noted that in informal English, the contracted form “gonna” frequently replaces “going to”, aiding their adaptation to natural speech (Dooly & Vinagre, 2022). An important aspect of language exchange was the improvement of pronunciation, intonation, and accent. By engaging with native speakers, students were exposed to accurate pronunciation and received feedback that helped them correct phonetic difficulties. In particular, those struggling with the pronunciation of specific sounds benefited from targeted feedback, which gradually improved their phonetic accuracy. Additionally, students learned to distinguish and accurately use subtle differences in word meanings that might otherwise go unnoticed in traditional instruction. For example, the word “smart” may signify “intelligent”, “neat”, or “painful”, depending on the context. Such practice contributed to a more precise understanding of vocabulary and its appropriate usage in different communication situations (Dooly, 2022).

The ability to accurately convey the meaning of words in context is crucial for both academic and professional communication. Participants in international exchange programmes often encounter situations where it is essential to express their thoughts clearly and precisely in a foreign language. Through language exchange, students not only mastered grammatically correct constructions but also enhanced their skills in using synonyms, intonation, and stylistic devices. During these exchanges, students also encountered linguistic and cultural barriers that complicated the communication

process. Differences in language structures, traditions, and communication styles could lead to misunderstandings. For instance, the directness of speech commonly found in English-speaking countries might appear impolite to Ukrainian students, while native English speakers could interpret Ukrainian politeness as excessive formality. Nevertheless, overcoming such challenges contributed to the development of intercultural communication skills. Students learned to adapt their communicative behaviour to cultural norms, consider non-verbal communication cues, and understand the socio-cultural context of specific expressions. For example, while studying abroad, students often found that their traditional style of communication required adjustment to integrate more effectively into the language environment.

The Erasmus+ programme is one of the most popular among Ukrainian students. According to the National Erasmus+ Office in Ukraine, six Ukrainian organisations have become partners in Erasmus Mundus Joint Master’s Programmes, indicating the increasing integration of Ukrainian higher education institutions into the European educational space. This, in turn, enhances the competitiveness of graduates in the labour market. Participation in academic mobility programmes helps improve the quality of education, promotes intercultural communication, and facilitates Ukraine’s integration into the global academic community. The Erasmus+ and Deutscher Akademischer Austauschdienst (DAAD) programmes offered Ukrainian students’ unique opportunities for language immersion, though their approaches to teaching and learning differed somewhat, as reflected in participants’ linguistic outcomes. Erasmus+ focused primarily on English-language instruction and provided a wide range of academic mobility options. A key feature of the programme was its emphasis on the communicative approach to language learning. Lessons were designed around real-life and professional communication scenarios,

which enabled students to acquire practical language skills. Thanks to the interactive format, students could engage directly with native speakers, significantly enhancing their language competence. Moreover, the programme allowed flexibility in the length of study, offering both short-term courses and long-term placements in English-speaking countries. This flexibility promoted both academic and cultural immersion, enabling students to gain not only language proficiency but also a deeper understanding of the socio-cultural context of the host country. In contrast, the Deutscher Akademischer Austauschdienst programme was centred on German-language instruction and provided students with a comprehensive introduction to German culture. Language immersion was more intensive, with long-term courses designed to facilitate full integration into Germany's academic and cultural environment. The DAAD placed particular emphasis on grammatical analysis and the advanced study of language structures, allowing students to attain a high level of language proficiency aligned with academic standards. The teaching methodology in DAAD was initially more traditional, favouring the grammar-translation method; however, over time the programme began incorporating communicative techniques to offer a more balanced learning experience. Additionally, the DAAD programme included numerous opportunities for internships and research placements at academic institutions in Germany, enabling students to combine theoretical learning with practical language use in professional settings.

In the Erasmus+ programme, grammar and vocabulary are taught through interactive methods that enable students not only to grasp the theoretical aspects of the language but also to apply them actively in practice. For example, grammatical topics are frequently introduced through communicative activities such as role-playing or group discussions, where students have the opportunity to use grammatical

structures independently in real-life scenarios. The focus is typically on grammatical categories such as verb tenses (e.g., using the present perfect to describe personal experiences), articles (in the context of English), and conditional sentences. Vocabulary is similarly taught through situational tasks: students may explore thematic vocabulary related to "travel" or "work" by engaging in dialogues or delivering presentations, allowing them to integrate new words actively into their speech. In this way, grammar and vocabulary are effectively combined in practical language use, with the emphasis placed on students' ability to apply these elements in authentic communicative contexts.

In the Deutscher Akademischer Austauschdienst (DAAD) programme, grammar is studied in a more detailed and formalised manner, with a strong emphasis on understanding complex language structures. For instance, students frequently engage with advanced grammatical constructions such as the passive voice, second and third conditional forms, and a range of modal verbs (e.g., *sollen*, *dürfen*, *müssen*) within the context of academic and scientific texts. Vocabulary is taught through specialised subject areas, such as terminology related to scientific research or technical language specific to fields like engineering or medicine, thereby enabling students to apply their German skills in professional contexts. Classes often incorporate writing tasks, providing students with opportunities to apply grammatical structures and domain-specific vocabulary in the composition of essays, scientific papers, or reports. Additionally, while residing in Germany, students actively practise grammar and vocabulary in authentic situations – such as participating in seminar discussions on academic topics or attending internship interviews – which fosters deep immersion in the language environment.

An important aspect of both programmes was the cultural context in which students learned languages. Erasmus+ offered the opportunity to become acquainted with a variety

of English-speaking cultures, including those of the United Kingdom, the United States, Canada, and Australia. This exposure enabled students not only to improve their language proficiency but also to gain insight into the diversity of English-speaking countries, thereby broadening their cultural horizons. In contrast, the Deutscher Akademischer Austauschdienst (DAAD) programme focused on German culture and history, giving students the chance to develop a deeper understanding of Germany, Austria, and Switzerland through the study of local traditions, literature, and art. In addition to cultural immersion, both the Erasmus+ and DAAD programmes devoted considerable attention to the study of individual lexical items and grammatical structures. Within the Erasmus+ framework, students learned to use English modal verbs such as “dürfen” (may), “müsse” (must), “können” (can), “sollen” (should), applying them in both academic writing (e.g., “Students must complete the assignment by Friday”) and oral communication (e.g., “Can I ask you a question?”). Similarly, in the DAAD programme, emphasis was placed on German modal verbs such as “dürfen” (may), “müssen” (must), “können” (can), and “sollen” (should). Students were taught to construct sentences such as “Studierende müssen ihre Hausarbeiten bis Montag einreichen” (“Students must submit their term papers by Monday”) and “You are not allowed to speak loudly in the library”, thus applying grammatical knowledge in academic contexts. Language learning in the Erasmus+ and DAAD programmes also differed in terms of integration into everyday life. In Erasmus+, students actively engaged with native speakers not only within academic settings but also through internships and cultural exchange activities, allowing them to deepen their knowledge via informal communication. In contrast, the DAAD programme placed greater emphasis on academic immersion, offering students internships and research opportunities at German academic institutions. This enabled them

to apply acquired knowledge in scientific and professional settings. In terms of financial support, both programmes provided substantial funding for participants. Erasmus+ offered scholarships that covered tuition fees, travel expenses, and accommodation, making the programme accessible to a wide range of students. The DAAD programme also provided various grants and scholarships to ensure that students could study in Germany without financial barriers, covering both living and study-related costs. Despite their differing emphases, both programmes made significant contributions to the development of philological education by enhancing language skills, broadening cultural perspectives, and offering professional development opportunities. Erasmus+ prioritised a communicative approach and integration with diverse English-speaking cultures, whereas the DAAD programme focused on deeper engagement with the German language and culture, with an emphasis on academic study and scientific research.

In addition, the combination of traditional and modern technologies enables the creation of a dynamic learning environment that motivates students to engage independently and interactively. One of the key aspects of successful learning is the use of interactive methods, including discussions, project-based activities, role-playing exercises, and the analysis of real-life cases. Digital technologies play a crucial role in exchange programmes by offering new opportunities for language learning, the acquisition of additional knowledge, and the development of skills applicable during students’ stays in foreign countries. Platforms such as Coursera and Khan Academy provide access to courses across a wide range of disciplines, including languages, science, and business, allowing students to expand their academic and professional knowledge. The primary advantages of these technologies are their accessibility and the flexibility to study according to individual schedules, enabling students to

organise their time effectively and combine academic study with other responsibilities. However, it is important to note that online courses cannot fully substitute in-person language learning, which is best achieved through direct interaction and communication with native speakers. Language exchange applications such as Tandem and Speaky should be considered complementary tools, allowing students to communicate with native speakers via chat, video, or voice calls. For example, an English language learner might enhance their vocabulary by practising words such as resilience in context: “One must develop resilience to overcome challenges”. Similarly, German language learners can focus on complex terms such as “Entscheidungsfreudigkeit” (“decisiveness”) by using them in sentences like: “Man muss Entscheidungsfreudigkeit zeigen, um schnell zu handeln” (“You have to show decisiveness in order to act quickly”). A key benefit of these platforms is the opportunity to engage directly with individuals from around the world, which significantly enhances language proficiency and fosters an understanding of diverse cultural perspectives. These tools serve as a valuable supplement to formal curricula, supporting the development of practical language usage. Nonetheless, some students may encounter challenges in adapting to this learning format due to varying levels of language proficiency among partners or the absence of professional supervision during the learning process. Incorporating diverse forms of learning helps tailor the educational experience to individual student needs and contributes to the development of language competences. The integration of digital platforms and international collaboration opens up new avenues for the practical application of language skills in real communicative situations. Table 1 presents the main forms of work used in the two student exchange programmes, namely Erasmus+ and the Deutscher Akademischer Austauschdienst. Self-study has played a key role in exchange programmes, as it enables

students to deepen their language and academic skills beyond the core curriculum. Digital technologies such as Moodle and Google Classroom have significantly streamlined the learning process by providing access to lectures, assessments, and other learning materials. Students’ complete assignments online and receive timely feedback from instructors. Applications such as Duolingo and Grammarly have supported language development through interactive exercises and grammar correction tools, both of which are essential for enhancing philological competence. For example, a student learning German might use Duolingo to practise the correct use of the modal verb “dürfen”: “Darf ich hier sitzen?” (“may”: “may I sit here?”). Similarly, an English language learner might work on forming sentences with should: “You should practise every day to improve your fluency”. Synchronous learning platforms such as Zoom and Microsoft Teams offered students opportunities to engage in real-time discussions, collaborate on group projects, and receive individual consultations. Translation tools such as DeepL, Linguee, and Reverso served as additional resources for working with texts, enabling students to quickly locate accurate translations and expand their vocabulary. For instance, a student could use Linguee to find the correct translation of the word sustainability, discovering that the German equivalent is “Nachhaltigkeit” (“Sustainability”). Together, these tools and platforms created optimal conditions for autonomous learning and the improvement of language skills.

Thanks to the integration of interactive methods, international cooperation, and digital technologies, students not only enhanced their knowledge but also developed communication skills in real-life situations. Traditional teaching methods – such as lectures, explanations of new material, textbook reading, and the completion of exercises – continue to form the foundation of education. These methods provide structure to the learning process, support the development of core knowledge, and help maintain ac-

ademic discipline. The acquisition of individual vocabulary items has become a key stage in students' language training. For instance, when learning English, students often use associative memorisation techniques. The word *achieve* may be associated with its root *-chieve*, which

resembles *chief* – a figure often linked with reaching goals. In German, a similar approach is used to memorise the word *“Erfolg”* (*“Success”*), which can be broken into *“er-”* (indicating a result) and *“-folg”* (resembling the English *follow*), suggesting a process that leads to success.

Table 1. Analysis of forms of work of students under the Erasmus+ and Deutscher Akademischer Austauschdienst Programmes

Subject	Forms of work	
	Erasmus+	Deutscher Akademischer Austauschdienst
Oral and written language practice	Online communication with native speakers, international workshops, participation in student conferences, integration of real communicative tasks, role-playing games, debates	Intensive language courses at German universities, academic writing, working with scientific texts, participation in scientific seminars
Foreign language grammar	Analysis of authentic texts, grammar games, application of grammar in practical communication	Studying grammar through academic articles, comparative analysis of grammatical structures, working with lexicographic databases
Linguistics and regional studies	Online meetings with representatives of other countries, cultural case studies, participation in international cultural days	Attending lectures at German universities, excursions, socio-cultural events, integration of cultural topics into learning tasks
Methodology of teaching foreign languages	Practical exercises with lesson modeling, case analysis, collaboration in international groups, use of EdTech, work in Microsoft Teams	Pedagogical practice in German educational institutions, analysis of didactic materials, application of communicative methods
Phonetics	Articulation simulators, phonetic games, native speaker pronunciation analysis	Working with language corpora, individual phonetics lessons, phonetic analysis of academic speech
Translation	Translation of authentic texts (scientific articles, news, reports), use of online resources (DeepL, Linguee, Reverso), collaborative work on translations in Google Docs, receiving feedback from native speakers	Working with professional CAT tools (SDL Trados, MemoQ), translation of scientific texts, simultaneous and written translation, cooperation with translation agencies

Source: created by the authors

Ukrainian students frequently take part in exchange programmes in countries such as the United States, the United Kingdom, Germany, Poland, France, and other European nations. These countries are popular destinations due to their high standards of education, cultural

exchange opportunities, and well-organised academic systems. Each of these countries presents unique characteristics in the teaching of English and German, which are essential for students aiming to advance their language proficiency (Table 2).

Table 2. Comparison of grammar acquisition processes among students participating in exchange programmes

Country	Exchange programme	Grammar teaching methodology	Main features of training	Example
USA	Fulbright	Communicative method, interactive exercises	Emphasis on communication skills, interactive methods	Using role-playing games to practice grammar (present perfect)
Great Britain	Erasmus+, British Council	Traditional approach with grammar exercises	Teaching with an emphasis on grammar details, extensive homework assignments	In-depth study of conditional sentences and articles
Germany	Deutscher Akademischer Austauschdienst, Erasmus+	Mixed method (using grammar games)	A combination of traditional and modern approaches to learning	Analysis of passive constructions, use of projects in lessons
France	Erasmus+	Inductive method (learning grammar through context)	Intensive courses for developing practical skills	Studying the imperfect through the analysis of literary texts
Poland	Erasmus+	Communicative and grammatical-translation method	Practice in a language environment, a large number of exercises	Moving from theory to practice through seminar discussions

Source: created by the authors

Learning English and German through exchange programmes presents both advantages and disadvantages, depending on the host country, teaching methodology, and the student's objectives. One of the main advantages is immersion in a language environment, which enables students to enhance their listening and speaking skills, as well as to acquire correct pronunciation. Studying English in countries where it is the official language offers students the opportunity to communicate directly with native speakers, significantly increasing the effectiveness of language acquisition. Exchange programmes often combine intensive language courses with practical tasks. For example, in the UK, students may participate in debates, which support the development of argumentation skills and active vocabulary, or in job interview simulations, which aid adaptation to the professional environment. Regarding the German language, learning abroad offers considerable advantages, particularly in gaining a deeper understanding of grammar and syntactic structures. In Germany or Austria, students have opportunities to practise the language in both

academic and professional settings. For instance, interactive methods such as "Sprachtandem" ("Language tandem") may be employed, where students communicate with native speakers, mutually assisting one another in improving language skills. Additionally, many training programmes include Projektarbeit (project work), which fosters the development of both written and oral competence. Despite these advantages, students may encounter challenges, particularly in adapting to a new culture and overcoming the language barrier during the initial stages. These difficulties can be mitigated through communicative teaching methods. For example, role-playing games simulate real-life scenarios such as visiting a shop or conducting business negotiations. Such exercises promote the development of language competence and help students to overcome the fear of communicating in a foreign language.

Another example of an effective combination of traditional and practical methods is project-based activity. Students can engage in joint projects that require them to create presentations, conduct interviews, write articles,

or produce videos in a foreign language. Such tasks contribute not only to the development of language skills but also to the cultivation of teamwork, analytical thinking, and creativity. Furthermore, the integration of digital technologies into the educational process opens up new opportunities for enhancing learning effectiveness. Online platforms, mobile applications, virtual environments, and interactive tasks help make learning more accessible and personalised. Online platforms such as Duolingo, Babbel, Busuu, and Rosetta Stone facilitate foreign language learning through interactive exercises, audio recordings, and games. Virtual environments such as VRChat or Mondly VR enable users to practise speaking with native speakers in realistic scenarios. These programmes also allow students to study the material independently at their own convenience, take tests, complete interactive exercises, and receive instant feedback.

In addition, the use of video lessons and webinars has proven to be beneficial. For example, when learning a foreign language, students can watch videos featuring native speakers, listen to podcasts, and analyse authentic materials such as news reports, interviews, or film excerpts. This supports the development of listening skills, enriches vocabulary, and improves pronunciation. Virtual Reality (VR) and Augmented Reality (AR) also hold significant potential in the educational process. The use of VR simulations enables students to immerse themselves in a virtual English-speaking environment and practise the language in realistic situations – for example, during a tourist trip or while attending a business meeting.

The traditional assessment system is often focused on testing theoretical knowledge through examinations or written assignments. However, this is insufficient for evaluating the actual level of language proficiency. Consequently, new approaches have been proposed that enable a more comprehensive assessment of students' knowledge, taking into account

both theoretical understanding and practical application. One such approach is comprehensive assessment, which combines written tasks, oral responses, tests, and practical projects. For example, instead of a conventional exam, a student may be asked to prepare a presentation in a foreign language, engage in a dialogue with a teacher, or write an analytical text that requires a well-reasoned expression of ideas. A portfolio containing the student's work throughout the course – such as essays, translations, video recordings of oral performances, and creative projects – makes it possible to assess not only the student's proficiency at a given moment, but also the progress in language skill development. It is advisable to incorporate self-assessment and peer assessment following group projects; students can evaluate one another's work, provide constructive feedback, and receive comments in return. This practice fosters the development of critical thinking and accountability for one's own learning outcomes.

The proposed recommendations can be implemented across various educational institutions. In higher education, blended learning can be adopted, whereby theoretical material is delivered through online resources, while practical tasks are completed during in-person sessions. In language schools, the use of role-playing games, communicative methods, and interactive platforms can significantly enhance learning effectiveness. Furthermore, it is essential to involve native speakers in the educational process through video conferences or language exchange programmes. The use of digital technologies is particularly crucial in the context of distance learning. For instance, during the COVID-19 pandemic, many educational institutions transitioned to an online format, where interactive platforms played a key role in maintaining the effectiveness of the learning process.

Overall, the findings of the study confirmed that combining traditional teaching methods

with practical activities and digital technologies significantly enhances the effectiveness of the educational process. The proposed assessment approaches enable an objective evaluation of both students' theoretical preparation and practical skills. The integration of modern methodologies – such as the communicative approach, blended learning, gamification, the flipped classroom model, and the use of AI for personalised learning – will contribute to the development of communication skills, increase student motivation, and improve the overall quality of education. Education should meet the demands of society, specifically by producing specialists equipped with soft skills, digital literacy, critical thinking, the ability to learn quickly and adapt to change, as well as a high level of communication and intercultural competence.

Discussion

The results of this study demonstrated that exchange programmes are an effective method for learning foreign languages, as they contribute to the development of students' communication skills and language motivation. This aligns with the findings of E. Ene *et al.* (2022), who emphasise that participation in language exchange programmes at higher education institutions enhances not only language proficiency, but also fosters the creation of an international educational environment that broadens students' cultural horizons. Intercultural communicative competence plays a significant role in the language exchange process. This is supported by the work of E. Sielanko-Byford & J. Zielińska (2024), as well as K. Gijsen *et al.* (2024), who highlighted that exchange programmes contribute to the development of intercultural competence and help students navigate more effectively in authentic communicative settings. These findings are consistent with those of M. Orsini-Jones (2023), who noted that virtual exchange can serve as a transformative space in the training of English language

teachers. Specifically, the ViVEXELT programme demonstrated that integrating virtual exchange into the educational process significantly enhances students' communication skills and enables immersion in real-world communicative contexts. This supports the view that interaction with native speakers or other proficient speakers in authentic contexts facilitates quicker and more effective acquisition of language structures. The study also indicates a significant impact of online exchange platforms on the language learning process. In particular, students who participate in virtual language exchanges often exhibit increased motivation and use the foreign language more frequently in their everyday lives. This finding is consistent with the research of I. Gelen & E. Tozluoglu (2021), who evaluated the effectiveness of the online platform Free4Talk and confirmed that digital tools foster favourable conditions for language practice and interaction between native speakers and learners. Participation in international exchange programmes can also promote the development of students' critical thinking skills. This finding is in line with the research of L. Torres Zuñiga & S. Söğüt (2024), who examined how intercultural virtual exchanges can support the application of critical pedagogy in English language teaching. They observed that such exchanges enhance students' understanding of the sociocultural context of language and help them to develop the ability to analyse and evaluate information critically.

Regarding individual learning styles, the results of the study showed that the effectiveness of language exchange may depend on the personal characteristics of the students. This is consistent with the findings of A. Halim *et al.* (2024), who developed a map of learning styles among students learning English as a foreign language and determined that different teaching methods vary in effectiveness depending on the learner group. In addition, the study confirmed the positive impact of student

exchanges on encouraging language learning, aligning with the findings of S. Heinzmann *et al.* (2024). Their systematic analysis of the effects of language exchange in primary and secondary education demonstrated that such programmes significantly enhance motivation to learn and accelerate the acquisition of language skills. In a globalised world, language competence can no longer be viewed in isolation from intercultural interaction. Digital exchanges, in particular, enable students to learn how to communicate effectively with individuals from diverse cultural backgrounds. Similar conclusions were drawn in the study by A. Potolia & M. Derivry-Plard (2022), which examined how virtual exchanges promote the development of intercultural communication skills and support students in adapting to digital communication settings. The study also underscored the importance of cultural context in the language exchange process. Learning in an authentic environment or engaging in communication with native speakers facilitates quicker adaptation to linguistic nuances and informal speech. This finding is consistent with the research of K. Hossain (2024), who analysed the role of culture in learning English and highlighted that immersion in a cultural environment helps to overcome challenges related to language barriers. Exchanges have a demonstrably positive effect on communication skills. This is supported by the findings of A. Salomão (2022), who observed that students participating in international language programmes use the target language more frequently in everyday life, contributing to improved acquisition. Both virtual and physical language exchanges also influence students' social relationships. This aligns with the results of B. Rienties & I. Rets (2022), who investigated interactions between students from China and Portugal. Their study showed that exchanges facilitate the formation of social bonds between students from different

regions – an outcome of particular significance in the context of international cooperation. These findings suggest that participation in language exchanges aids in overcoming cultural stereotypes and fosters positive attitudes towards individuals from other countries. Another key aspect highlighted by the study is the importance of authenticity in language exchange and the influence of context on learning effectiveness. This corresponds with the conclusions of O. Tătaru & I. Vişan (2023), who analysed the functionality of exchanges in the context of English as a global language. They concluded that the success of language exchange largely depends on the context of language use and the extent to which learners are able to practise the language in a natural environment.

However, the study also identified several challenges associated with implementing language exchange programmes, particularly in a virtual format. For instance, students often reported a lack of synchronous interaction and live communication. This is consistent with the findings of H. Ibrahim (2022), who reviewed project-based learning through digital technologies and emphasised that, although virtual platforms can be effective, they cannot fully replicate the personal experience of direct communication. Another challenge noted was the asynchrony of the learning process, whereby students from different time zones were unable to interact effectively in real time. This finding is supported by the study of K. Kopczyński & C. Silvia (2024), who examined the difficulties of teaching foreign languages in asynchronous formats and concluded that such modes can reduce student engagement. In the context of Chinese language instruction, the study revealed that language exchange is particularly effective when it incorporates cultural elements such as the country's traditions, history, and art. This aligns with the findings of H. Luo (2023), who analysed a Chinese-Amer-

ican virtual exchange and demonstrated that successful language learning is facilitated by a deep understanding of cultural context. Similar conclusions were drawn by B. Topaz *et al.* (2023) and N. Mačičková & E. Kováčiková (2024), who recommended the integration of virtual exchanges into English teacher training programmes to enhance methodological competence. This study confirmed that participation in such exchanges increases students' preparedness for spontaneous communication in a foreign language. These findings are consistent with the research of A. Zhou (2023), who found that Chinese students engaged in language exchange exhibited a higher level of readiness for oral communication than those who followed traditional learning methods.

Thus, the results of this study confirmed that exchange is one of the most effective methods for learning a foreign language, as it contributes to overcoming communication barriers and developing language competence, intercultural awareness, and learning motivation. At the same time, as shown by other researchers, the process presents certain challenges, including adaptation to a new environment, the use of digital technologies, and the individual learning styles of students.

Conclusions

The study confirmed the effectiveness of integrating academic mobility programmes into the educational process for students studying a foreign language. As a result of a comparative analysis of the Erasmus+ and Deutscher Akademischer Austauschdienst (DAAD) programmes in relation to grammar learning, it was found that Erasmus+ focuses on the interactive use of language in real-life situations. This includes engaging students in dialogues, discussions, and group projects, which facilitates the acquisition of grammatical structures through communication with native speakers and immersion in cultural contexts. In contrast, the DAAD

programme emphasises the systematic study of grammar using traditional methods, such as the grammar-translation approach, with intensive exercises and translation tasks. This provides a deeper theoretical understanding of grammar. Therefore, the primary distinction lies in the focus of each programme: Erasmus+ prioritises practical application, whereas DAAD prioritises the theoretical study of grammatical rules. This highlights the importance of combining both approaches to achieve optimal results in language learning.

Digital technologies such as Coursera, Khan Academy, EdTech, Tandem, and Speaky have played a significant role in exchange programmes, greatly enhancing the quality of language education. These platforms have provided students with access to interactive courses, online resources, and opportunities for practical communication with native speakers. They also offered valuable tools for independent study and the improvement of language skills, thereby contributing to the development of communicative and cultural competences. Furthermore, these technologies have helped overcome the barriers of distance and time, offering students more opportunities to learn and practise languages in contexts where physical access is limited.

The findings of the study indicate a need to improve foreign language teaching methods in higher education institutions in Ukraine. This can be achieved by actively involving students in international academic exchange programmes, employing modern digital technologies, and integrating communicatively oriented teaching methods. Based on the results obtained, recommendations have been developed for educators to enhance the educational process. In particular, it is proposed to expand the implementation of academic mobility programmes, more actively adopt digital platforms and distance learning methods, and increase the extent to which students are

integrated into real-life language use situations. Future research may include a broader comparison of international academic mobility programmes such as Fulbright, Humboldt, and others. Additionally, it is planned to explore the impact of these programmes on the academic and professional trajectories of participants across different countries.

None.

None.

None.

Acknowledgements

Funding

Conflict of Interest

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Обмін як спосіб ефективного вивчення іноземної мови

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Анотація. Метою дослідження було з'ясування особливостей методу обміну студентами для вивчення іноземних мов, а саме англійської та німецької, в Україні з урахуванням їх впливу на мовну компетентність студентів. Методологія включала такі методи, як порівняльний аналіз програм обміну Erasmus+ та Deutscher Akademischer Austauschdienst, а також здійснено аналіз цифрових технологій такі, як Coursera, Khan Academy, EdTech, Tandem та Speaky для покращення якості навчання та забезпечення додаткових інструментів для мовного занурення, практичних занять та комунікації між студентами і носіями мов. Було виявлено, що різниця між програмами Erasmus+ та Deutscher Akademischer Austauschdienst у вивченні граматики полягає в підходах до інтеграції граматичних тем у навчальний процес. З'ясовано, що у програмі Erasmus+ більше уваги приділяється комунікативному методу, що акцентує на використанні мови в реальних ситуаціях та дозволяє студентам покращувати граматичні навички через контекст. Водночас програма Deutscher Akademischer Austauschdienst, хоча й використовує комунікативний підхід, зосереджується більше на граматико-перекладному методі, який передбачає детальне вивчення граматичних правил та їх застосування через переклад та аналіз текстів. Було розглянуто вплив академічної мобільності на адаптивність студентів, їхню здатність швидко освоювати новий матеріал і використовувати мову в реальних комунікативних ситуаціях. Обмін, як спосіб ефективного вивчення іноземної мови, виявився дієвим завдяки поєднанню теоретичних знань із практичними завданнями, що сприяло розвитку міжкультурної комунікації. Студенти, які проходили навчання за обміном, мали кращі результати в тестах, швидше долали мовний бар'єр і демонстрували вищий рівень академічної успішності, що підтверджує ефективність поєднання традиційного навчання з практичним досвідом. Практичне значення роботи полягає в обґрунтуванні студентського обміну, як методу вивчення іноземних мов та розробці рекомендацій щодо поєднання традиційного навчання з практичними завданнями й цифровими технологіями для підвищення рівня мовної компетенції студентів

Ключові слова: освітній процес; міжнародна мобільність; культурний обмін; міжкультурна компетентність; цифрові технології



Reception of historical memory in the works of contemporary Polish writers

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Abstract. The purpose of the study was to explore how authors of Polish prose from the late 20th to early 21st century reflected the past and constructed collective experience by drawing upon a range of archival sources and artistic techniques. This study adopted an interdisciplinary approach that integrates comparative-historical analysis, reception theory, contextual interpretation of literary texts, methods of cultural analysis for examining collective memory, and a comparative perspective with analogous narratives in Ukrainian literature. The analysis demonstrated that Polish writers transformed historical material through genre experimentation, including elements of horror and phantasmagoria, which underscores the unfinished nature of social trauma and encourages readers' extended reflection on collective moral guilt, contributing to national identity development. The works of Stanisław Srokowski, Łukasz Orbitowski, Andrzej Szczypiorski, Igor Ostachowicz, and Sebastian Reńca demonstrate a dynamic interplay between documentary sources (such as archives and eyewitness testimonies) and the authors' psychological and myth-making techniques, which together create a space for multifaceted interpretations of the past. These texts also illuminated the moral dilemmas generated by divergent historical narratives. The findings demonstrated that the incorporation of figures such as ghosts, zombies, or other markers of the "return of the dead" functioned as metaphors for unresolved historical conflicts, which required contemporary re-evaluation. Such representations reflected deeply contradictory aspects of national memory, particularly in relation to taboo subjects such as collaborationism and the post-war underground. The reception of historical memory in these Polish texts extended beyond the mere presentation of facts, evolving into a complex interpretation that fused documentary evidence, authorial intuition, and socio-cultural stereotypes, while offering new perspectives on the interplay between official and marginalised memory. The practical value of this study lies in the potential application of its

Suggested Citation:

Muravin, A. (2024). Reception of historical memory in the works of contemporary Polish writers. *International Journal of Philology*, 29(1), 42-57. doi: 10.31548/philolog/1.2025.42.

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conclusions in further literary and cultural research, the development of educational programmes, interdisciplinary initiatives, and public discourse aimed at critically renewing historical consciousness and fostering a more sustained and reflective democratic culture of memory

Keywords: Second World War; Holocaust; horror; postmodernism; tragedy

Introduction

The relevance of historical memory in contemporary Polish literature emerged as a critical factor in shaping national and cultural identity, as it reflects the multifaceted efforts to preserve and reconstruct the past within post-conflict contexts. In Polish literature of the late twentieth and early twenty-first centuries, the analysis of stylistic and narrative features of fictional receptions of historical memory shows that writers employed various literary techniques to represent historical events. Authors combined archival data, oral testimonies, and documentary materials with fictional elements, thereby constructing complex narratives in which historical facts acquired symbolic and emotional resonance. Such an approach enabled writers not only to reconstruct the past but also to frame it within the context of present-day debates, exposing tensions between official historical accounts and subjective recollections.

Authors J.T. Baumele-Schwartz & L. Ganor (2024) conducted a comprehensive analysis of the history and memory of the Holocaust in the context of Polish and Jewish communities. Their use of an interdisciplinary approach and archival data indicated the multidimensional nature of collective memory construction. The study demonstrated that Holocaust memory underwent continuous transformations, blending personal testimonies with national historical narratives. C. Bertossi *et al.* (2020) explored how historical narratives were employed within the context of contemporary migration. By adopting an interdisciplinary methodology, they highlighted the complexity of the interaction between the past and the present. Their findings showed that historical narratives

played an active role in shaping contemporary identity politics and migration processes. M. Gancarczyk (2020) examined the strategic use of narrative techniques and the constructed illusion of self-interpretation in the works of Łukasz Orbitowski. Through qualitative textual analysis, the study demonstrated how the use of specific literary devices created an impression of a subjective yet contradictory interpretation of the self. The study also showed that narrative strategy functioned as a substantial factor in shaping readers' perception of the text, influencing its artistic coherence and the reader's ability to reconstruct the past.

Author P. Czapliński (2024a) conducted a detailed analysis of cultural practices related to the legitimisation of memory concerning the tragic events of the Holocaust within Polish society. Employing methods of textual analysis, he identified specific rhetorical and narrative strategies that shaped public discourse on death. The study uncovered that dominant literary models contributed to the reconstruction of historical memory by integrating official narratives with individual recollections and emotional experiences. The findings confirmed that contemporary cultural practices reflected the complex contradictions between official historiography and subjective experiences of tragic events.

K. Kończal & A.D. Moses (2023) investigated the interaction between patriotic historical narratives and (re)nationalisation of memory. By adopting an interdisciplinary approach that combined historiographical analysis with cultural studies, they uncovered the mechanisms through which collective memory was constructed and mobilised. Their analysis

demonstrated that state institutions and cultural producers significantly influenced public perceptions of the past. The study emphasised the critical role of these processes in shaping contemporary national identity. M. Kotwas & J. Kubik (2022) explored nostalgia in Polish political discourse using a comparative analysis of populist and non-populist narratives. Their findings indicated that nostalgic elements played a substantial role in shaping political identity and voter mobilisation. The analysis showed that the use of nostalgia generated an ambivalent effect, combining positive and negative connotations of the past. As a result, the study contributed to a deeper understanding of the role of historical memory in contemporary political processes in Poland.

In "Nadchodzi", L. Korol (2023) analysed M. Brynych's novel, focusing on the representation of the collective trauma of the Holodomor through the use of zombie apocalypse imagery. The author discovered that the provocative literary techniques employed by the writer aimed to reactivate historical memory and stimulate public dialogue concerning traumatic past events. The study emphasised that such an approach provoked debate on the moral and ethical boundaries of artistic representations of historical tragedies.

While a substantial body of research exists on historical memory, the relationship between official historical narratives and personal recollections in the work of contemporary Polish writers remains underexplored. The purpose of the study was to identify artistic strategies employed in the rethinking of historical memory in contemporary Polish prose, to determine the specific ways in which documentary and fictional elements are combined in modelling collective experience, and to establish the role of literature in the critical revision of historical narratives and the development of new socio-cultural approaches to understanding the past. The objectives of the study include identifying the stylistic and narrative features used

in the interpretation of historical memory, analysing the relationship between collective and individual memory, and exploring the influence of historical and cultural factors on the formation of contemporary narratives of the past.

Materials and Methods

A wide range of theoretical and literary sources was utilised in this study, allowing for a comprehensive investigation of historical memory in Polish and related Ukrainian literary contexts. The theoretical framework drew primarily on the work of M. Halbwachs (2020), which addressed the development of collective memory within social groups. The study by Y. Assmann (2011) provided important distinctions between individual and collective levels of memory, while the contributions of P. Nora (2021) were essential for understanding the concept of "lieux de mémoire" within cultural consciousness. These theoretical approaches served as the methodological foundation for interpreting the artistic strategies through which Polish writers construct historical memory in their works.

The empirical component of the research involved the analysis of literary texts that represent various aspects of historical events. Particular attention was given to Polish works such as "Nadchodzi" by L. Orbitowski (2017), "Night of the living Jews" by I. Ostachowicz (2009), "From the shadows. A novel about the ex-clausted soldiers" by S. Reńca (2011), "Ukrainian lover" by S. Srokowski (2008), and "Beginning" by A. Szczypiorski (1986). The Ukrainian novel "Bread with Cartilage" by M. Brynych (2020) was also examined, which allowed for a broader perspective extending beyond the Polish cultural context. These texts serve as examples of how authors employ a range of narrative techniques, ranging from realism to phantasmagoria and horror, to reconsider and recontextualise the historical past.

Five key methods were employed to achieve the research objectives, each playing a distinct role in the overall investigative process.

The historical and cultural analysis enabled a connection between literary texts and their historical context, allowing for the tracing of how socio-political conditions influenced the formation of plots that transformed real events into artistic form. This approach made it possible to interpret literary texts as a mode of “philosophical reflection,” in which ethical dilemmas and existential questions surrounding traumatic events were interwoven.

The literary method encompassed the identification of narrative strategies and the exploration of poetics that shaped the reader’s perception of the past. This method facilitated conclusions regarding the generic nature of the analysed texts, the functions of realism and fantasy, and the characteristics of the authorial style. The comparative approach allowed tracing how similar historical premises or conflicts were represented in Polish and Ukrainian cultural contexts. Polish literary texts such as “Ukrainian lover” by S. Srokowski and “Nadchodzi” by L. Orbitowski were compared with the Ukrainian novel “Bread with cartilage” by M. Brynich. This allowed for the identification of shared narrative paradigms and unique national strategies for adapting traumatic historical experiences. The analysis examined whether recurring narrative paradigms could be observed in Polish and Ukrainian texts or whether each national literature demonstrated distinctive means of engaging with a tragic past. The integrated application of these methods provided a comprehensive picture of the literary reception of historical memory, highlighting the multi-layered and often contradictory nature of its representation in the works of Polish writers and selected authors from the Ukrainian cultural sphere.

Results

Key themes and motifs of historical memory in contemporary Polish literature

Historical memory occupied a prominent place in historical and cultural research, as it

encompasses the preservation and transmission of knowledge about the past. M. Halbwachs (2020) argued that collective memory is formed within specific social groups, with its boundaries and interpretations shaped by the community’s current needs. According to this theory, people do not recall the past in its pure form; instead, they produce selective images that reflect their system of values and worldview. P. Nora (2021) maintained that in the era of information technologies, a rupture emerged between individuals’ direct experience and the globalised world, resulting in memory entering a state of archiving. He emphasised that memory was losing its organic authenticity and was instead being constructed in “sites of memory” – such as museums, monuments, and archival repositories. Y. Assmann (2011) explored “cultural memory”, which, unlike personal recollection, operates in the public sphere and sustains collective identity across generations. He highlighted the role of rituals, texts, and traditions in stabilising a community’s conception of its own history, also noting the inherent selectivity and potential distortions involved.

In the context of Polish literature, the issue of historical memory underwent a specific mode of representation, visible in texts that blend elements of documentary testimony with fictional invention. A distinctive feature of literary interpretation lies in the fact that authors do not merely recount facts, but construct a new totality in which historical events take on symbolic meaning. Writers employ a range of narrative devices – from realism to phantasmagoria – to underscore the ambiguity of the past and demonstrate that memory does not exist in a monolithic form. Despite a general tendency towards documentary realism, Polish authors simultaneously exhibit a proclivity for the subjectivisation of history, drawing on individual emotional perspectives.

The theories of M. Halbwachs, P. Nora and Y. Assmann underscore the distinctions between collective and individual memory.

Within contemporary Polish literature, these categories emerge in a multidimensional interaction, as authors depict characters who attempt to reconcile personal recollections with what is accepted in public discourse. Collective memory is often portrayed as an official narrative serving specific political or ideological functions, whereas individual memory consistently brings problematic aspects to the fore, challenging or supplementing established versions. Such interactions suggest that the past does not simply constitute a set of “facts” but becomes a foundation for conflicting interpretations. Literary fiction constructs representations of the past that may draw upon archival sources, oral histories, or cinematic reflections, but does not merely replicate them. Rather, it transforms them through the author’s imagination and distinctive style. In this way, images of the past became dynamic, and writers transformed into mediators between actual history and its reception. The employment of various genre forms – from the realist novel to fantastical prose – enabled a deeper appreciation of the diversity of historical experience. For example, authors could extract fragments from archives or eyewitness testimonies and intertwine them with fictional narrative strands, thereby creating a contrast between the “official” version and a more “personal” interpretation.

The interaction between literature and other forms of memory (archives, oral histories, cinema) emphasised that historical experience was multidirectional and required diverse means of representation. In the Polish context, it was evident that writers consulted archival records to verify or reconsider facts. Oral history, recorded through interviews or familial narratives, became an important source for revealing the subjective dimension of memory, while cinema provided a visual channel capable of influencing viewers’ emotions and imagination. Consequently, these different channels of memory interacted, reinforcing the multifaceted nature of historical truth. Thus, literature did not

remain isolated from other forms of representing the past but engaged in a dialogue with them, reflecting the layered complexity of experience.

Polish literature of the late twentieth and early twenty-first centuries, in its depiction of historical memory regarding events of the Second World War, frequently offered a profound reflection on the nation’s past, exploring complex moral and political aspects of Polish society’s struggle against the occupier while revealing tensions among various social groups. Polish writers, drawing on the tragic context of 1939-1945, created a distinct cultural code in which recollections of resistance to occupation and internal conflicts among Poles, Ukrainians, and Jews played a substantial role. At the heart of these works lay a process of “revealing old wounds”, whereby authors not only recounted the drama of war but also proposed original narrative techniques, for instance, the incorporation of elements of the horror genre. This approach underscored a further dimension of responsibility regarding how the tragic aspects of the past should be remembered and recounted, ensuring that the public debate on complex questions of national history would not dissipate (Wójcik-Dudek, 2020).

In the novel by S. Srokowski (2008), “Ukrainian lover”, the author attempted to portray the complex and contradictory relationships between Polish and Ukrainian populations, who have long coexisted in border regions. These territories lay at the intersection of civilisational, religious, and political interests at the beginning of the twentieth century, when Europe’s map was being redrawn in the wake of the First World War, new states and borders emerged, and nationalist movements intensified. Regions where Poles and Ukrainians came into contact became a political battleground for asserting identity. In some parts of the Polish Republic, a segment of the Ukrainian population sought cultural autonomy, while radical representatives of nationalist circles stressed the need for separation (Vialova, 2020). In the 1930s, Polish

authorities pursued a policy of “pacification” in Ukrainian villages, which provoked a wave of indignation and heightened anti-Polish sentiment. With the onset of the Second World War and the arrival of Nazi forces, the situation became even more complex; both the UIA and the Home Army sought to exploit German occupation for their political aims, while Nazi terror decimated both Polish and Ukrainian elites. S. Srokowski vividly portrayed this atmosphere of total suspicion and hostility, which often took on a menacing character owing to issues of loyalty and collaboration with the occupying regime. Hence, the historical foundation of this novel lay in the portrayal of the prolonged burden of conflicts rooted in various eras and the heightened state of wartime misery when local misunderstandings escalated to particularly brutal forms.

In “Nadchodzi”, L. Orbitowski (2017), in his book “Nadchodzi” (“It is coming”), addressed alternative aspects of wartime and post-war realities by combining historical facts with elements of gloomy fantasy. At a time when the Warsaw Ghetto had become a symbol of the tragedy confronting Polish and Jewish communities, the city was subjected to the daily terror of occupation, its inhabitants faced mass shootings, deportations, and comprehensive round-ups. Isolation of the Jewish population began as early as 1940, following the Nazi decision to segregate Jews from the rest of the city by erecting walls around them and stripping them of fundamental rights. Within this historical context, L. Orbitowski emphasised the religious and ideological clashes that only intensified the prevailing atmosphere of helplessness. He also wrote about the mobilisation of the Polish underground; the Home Army and units of the National Armed Forces fought the occupier, although varied ideological orientations emerged within these groups. The historical reality was so complex that some underground formations, perceiving a threat from the Soviet advance, frequently experienced internal conflicts regarding

their future political direction. In “Nadchodzi,” L. Orbitowski stressed that mass killings and death camps were not merely ordinary episodes of the wartime period but had evolved into a collective trauma that haunted subsequent generations. This fantastical element enabled him to convey, even more vividly, the fear and guilt that emerged in a society incapable of preventing a catastrophe and the enormous loss of life.

S. Reńca (2011), in his work “From the shadows. A novel about the ex-captured soldiers,” focused on a period that was conditionally considered post-war, even though numerous conflicts continued to unfold on Polish territory. Although the Second World War ended in 1945, groups of underground fighters, known in historiography as “cursed soldiers” (Tomczok, 2020), remained active in Poland. They opposed the communist regime, drawing on the legacy of pre-war independence organisations and armed structures that distrusted the new order. The historical context primarily reflected the considerable influence of the Soviet Union over Poland and the imposition of the new order through repressive, coercive methods, including the persecution of former officers and underground members. S. Reinca employed a complex historical framework to illustrate how an absence of unequivocal evaluation of past events, coupled with the accumulated burden of war, led to new acts of violence. Consequently, the “cursed soldiers” sparked fierce debates in Polish society, with some viewing them as unyielding fighters against totalitarianism, and others regarding them as perpetrators of bloody reprisals.

Researcher A. Szczypiorski (1986), in his novel “Beginning,” provided a detailed portrayal of occupied Warsaw, which had been under Nazi control since 1939. Historically, the city experienced a series of humiliations and restrictions, ranging from the destruction of cultural monuments to mass executions and the persecution of its intelligentsia. The Jewish population of Warsaw, once one of the largest

in Europe, suffered particularly ruthless annihilation between 1940 and 1943, during the period of the Ghetto. Constant raids, food shortages, diseases, and deportations to death camps transformed life in the ghetto into a struggle for survival. Meanwhile, beyond the ghetto walls, a segment of Poles joined clandestine organisations such as the Home Army, while another part of society sought to avoid any form of resistance, concentrating solely on self-preservation. Studies emphasised that the fate of Jews in the ghetto largely depended on the willingness of other citizens to risk their own lives by offering assistance. However, fear of reprisals prevented many from having the courage to shelter fugitives or provide support. A. Szczypiorski, in "Beginning," illustrated how people in these extraordinary circumstances faced existential dilemmas, which formed the principal historical foundation of the work.

"Night of the living Jews" by I. Ostachowicz (2009) presented an unusual narrative in which the former victims of the Holocaust returned to contemporary Warsaw as zombies. This artistic metaphor suggested that the collective consciousness of Poles had not yet fully processed the issue of accountability for the tragic events of the 1940s, including the mass murder of Jews and the culpability or indifference of those who remained passive. Historically, Warsaw lay in ruins following various uprisings, including the Jewish uprising in the ghetto in 1943 and the general uprising in 1944, forcing its inhabitants to rebuild almost from scratch (Hiemer *et al.*, 2021). In the post-war period, as communist authorities established a new political order, debates over whether Polish society aided in rescuing the Jews or distanced itself from their fate remained deeply contentious and were at times suppressed (Żurek, 2021). I. Ostachowicz interpreted these issues through the prism of the "return of the dead", demonstrating that the ability of the "phantom of the past" to intrude into the present provided a stimulus for re-evaluating national and moral

responsibility (Höllwerth, 2021). This idea underscored that history never remained confined solely to the past if society failed to draw appropriate conclusions.

All the works examined drew inspiration from the historical events that unfolded in Poland during the first and middle decades of the twentieth century. They focused on pressing issues of national memory, occasional mutual accusations, and the complex challenges associated with survival under occupation or the reconstruction of a devastated country. The roles played by Nazi crimes, the Holocaust, internal nationalist movements, and post-war underground activities sparked debates among historians and in broader public discourse (Ray & Kapralski, 2019). In academic discourse, the topic of the "cursed soldiers" was particularly contentious, as it touched upon questions of heroism, sacrifice, and simultaneously a willingness to resort to violence for political ends. Relations between the Polish and Ukrainian populations in the border regions, where historical wrongs multiplied by military troubles, have long served as a breeding ground for conflicts, were equally contradictory. Concerning the Holocaust, literary works explored the issues of societal participation versus indifference, highlighting individual narratives of rescue or betrayal (Stępień, 2019). Moral evaluation of these events proved complex and multifaceted; therefore, authors employed a range of artistic techniques, from realist descriptions to elements of fantasy and horror.

The above texts diversely elucidated intricate themes of historical memory associated with the involvement of Polish partisans in the conflict, internal struggles, the fate of the Jewish community, and the arduous search for truth regarding brutal acts committed by various sides. Authors utilised varying genre techniques – spanning naturalistic depictions of violence to eerie, unsettling elements – to underscore the enduring wounds inflicted by war, wounds which persisted for decades and

continued to evolve in contemporary culture. The narratives served not merely to preserve memory but also provided an opportunity for critical re-evaluation. Such works released memory from idealised recollections and invited readers to actively reassess the past. They encouraged a reconsideration of conventional images of heroism and drew attention to the complex moral conflicts that frequently remained outside the bounds of official historical accounts.

Polish authors exhibited a desire to unearth the inconvenient truth stemming from divided assessments of partisan actions, the implicit acceptance of anti-Semitism, or accounts linked to reprisals against civilian populations. Similar motifs emerged in depictions of Jewish citizens who, having survived the Holocaust, often encountered a renewed wave of hostility in the post-war period (Czapliński, 2024b). This evidence confirmed that the remembrance of the Second World War in Polish literature was not confined to portrayals of patriotism or heroic self-sacrifice. Memory became a field of intricate ethical enquiry in which every detail assumed the weight of testimony to past trauma and served as a measure of humanity. In analysing the horrors of the Holocaust and the experiences of the Polish underground, authors refrained from embellishing or justifying certain episodes; instead, they established a direct emotional communication with readers, inviting thoughtful reflection.

The reception of historical memory in the works of contemporary Polish writers proved to be multifaceted. The texts addressed issues of responsibility and guilt, the dilemma between struggle and indifference, and society's capacity to confront truth and acknowledge its failings. Both heroes and anti-heroes symbolised acts of heroism alongside the darker aspects of national consciousness. The subject of the Second World War, the activities of Polish partisans, and the tragedy of the Warsaw Ghetto reflected a search for justice in circumstances where moral benchmarks became blurred. Allusions to

the horror genre emphasised the profound psychological impact of the war, with terror arising from actual historical events surpassing that of any fictional monstrosities.

Stylistic and narrative characteristics of the artistic reception of historical memory

Polish literature from the late twentieth to the early twenty-first century, oriented towards a re-examination of historical memory, often employed intricate and multi-layered narrative strategies through which authors sought to revitalise the past within the framework of contemporary debates. Artists of the twenty-first century no longer accepted a one-dimensional portrayal of historical facts. They pursued innovative approaches that integrated documentary foundations with fictional narrative strands, enriched texts using postmodern techniques, and engaged in irony alongside a playful subversion of conventional narrative structures. In this manner, the artistic reception of history assumed the character of a multifaceted dialogue between past and present.

Autobiographical and documentary elements assumed a central position in this process. In many Polish novels devoted to World War Two or post-war events, authors employed the form of "personal testimony". S. Srokowski used eyewitness accounts, partially interweaving them with his own recollections of a childhood on the border. S. Srokowski created a distinct "engagement effect", whereby genuine details drawn from familial or local narratives were incorporated into the artistic fabric of the text, imbuing it with historical authenticity while simultaneously raising doubts regarding its complete accuracy. The writer deliberately blurred the boundary between fact and fiction to highlight the complexity of perceiving war-time experiences; even those who witnessed events first-hand could never capture every aspect of reality. The inclusion of archival documents, memories, and letters assumed a similar function in S. Reńca's novel "From the

shadows: A novel about the ex-clausted soldiers.” This author concentrated on the ambiguous activities of Polish partisans who, following the conclusion of World War Two, contested the prevailing political reality and continued their struggle. S. Reńca incorporated fragments of archival reports, excerpts from military protocols, and correspondence that reflected the genuine sentiments and conflicts of that period. Such recourse to documentary sources fulfilled a dual function; on one hand, it grounded the work in a specific historical context, while on the other, it created a space for subjective interpretation. Archival texts could be incomplete or distorted by political censorship, thereby providing scope for authorial manipulation and generating doubts about the “official” versions.

Literature as “personal testimony” manifested itself most distinctly when authors wrote in the first person or introduced semi-autobiographical protagonists who were either witnesses to events or had meticulously researched the archives and landscapes of memory (Van der Poel, 2019). A. Szczypiorski offered an almost intimate portrayal of occupied Warsaw and life therein, relying on the inner monologues of characters who experienced tension and fear yet strove to maintain human dignity. A. Szczypiorski did not conceal the documentary sources upon which he based his narrative; he adeptly integrated these within the inner lives of his characters, thereby obscuring the boundary between chronicle and subjective confession. Postmodern techniques of historical interpretation emerged as an attempt to undermine established grand narratives and propose alternative forms of memory that invited critical reappraisal. Writers who employed such methods sought to demonstrate that history was not univocal but rather composed of numerous fragments that sometimes contradicted one another. In “Nadchodzi”, L. Orbitowski deliberately combined historical realities (including the existence of the Warsaw Ghetto) with elements of a horrific atmosphere that disrupted the

linearity and realism of the narrative (Tabaszewska, 2023). This strategy challenged the possibility of a single “true” version of events and permitted the depiction of wartime traumas through the prisms of absurdity, irrationality, and fear, thereby accentuating the helplessness of humans in conditions of catastrophe.

Intertextuality and the deconstruction of historical narratives in Polish prose entailed explicit quotation of classical texts, references to folkloric motifs and popular culture, which obstructed the conventional reappraisal of traditional perspectives. In “Night of the living Jews”, I. Ostachowicz incorporated not only the zombie theme but also allusions to biblical narratives and works devoted to the Holocaust (Borowicz, 2015). I. Ostachowicz transformed the classic zombie image into that of a victim of the Holocaust, deconstructing the established understanding of the tragedy and compelling the reader to consider whether extreme cruelty can be addressed in terms of genre conventions. The writer appeared to breach acceptable limits by merging historical reality with the mass culture, demonstrating that memory is not static but is continuously reshaped under the influence of modern discourses. Irony and playful engagement with historical facts pervaded Polish prose, especially in works where authors induced the reader to question the veracity of official accounts. S. Srokowski, while describing the struggles between Polish and Ukrainian formations, intermittently interwove humorous episodes that highlighted the disjunction between officially endorsed heroism and tragic reality, whereas L. Orbitowski transported the reader into a realm of semi-fantastical nightmares, in which historical details sometimes aligned with archival records and at other times diverged from them. This strategy undermined the modernist myth of linear history and affirmed that memory is shaped by fragile and mutable constructs.

Metaphors and the symbolism of memory functioned as essential instruments through

which Polish writers sought to convey the uncertainty and pain of the past. Images of ruins frequently served as reminders of demolished cities and disrupted human lives. In “From the shadows. A novel about the ex-clausted soldiers”, ruins operated not only as the material backdrop but also as a sign of the internal disintegration of protagonists unable to secure their place in the new post-war order. Apparitions appearing in the texts, for instance, in “Night of the living Jews”, embodied the resurgence of repressed memory, re-emerging into the present through horrifying visions; such imagery corroborated the necessity of re-experiencing historical trauma to prevent it from becoming a perpetual burden or even a threat to future generations.

Mirrors in selected works symbolised the means by which society might examine itself through the prism of history. Authors often depicted old mirrors discovered among ruins or in museums, reflecting not only the contemporary protagonist but also the tragedies of past decades. This technique conferred multiple layers of meaning on the portrayal, with the mirror becoming a site of self-encounter that simultaneously embodied the presence of another from a different era. The quest for individual identity within a historical context manifested in the insistence that the past would return, stirring the present and revealing deep fissures in cultural memory. Places of remembrance, including cities, museums, and cemeteries, frequently emerged as spaces where the past was revitalised and maintained close contact with the present. Warsaw in A. Szczypiorski’s “Beginning” functioned not merely as a geographical location but as a complex metaphor imbued with the imprint of occupation and destruction. A labyrinth of streets, divided into “ordinary” and “segregated” (Jewish) sections, intensified the perception of two coexisting yet virtually non-intersecting worlds. Museums, referenced in certain novels, such as selected episodes in L. Orbitowski’s “Nadchodzi”,

became spaces of official memory, while simultaneously revealing those gaps of information that were publicly omitted. Cemeteries served as the final boundary between the living and the dead, prompting protagonists to engage in painful reflections on the price that society paid for its ideologies and conflicts.

Within this context, the comparison with M. Brynich’s novel “Bread with cartilage” (2020) proved appropriate. Originating from the Ukrainian literary tradition, the work nonetheless revealed affinities with Polish texts in its approach to interpreting historical trauma. M. Brynich employed documentary motifs, integrating fragments that hinted at the events of the Holodomor and other twentieth-century catastrophes into a fantastical narrative. The zombie apocalypse unfolding in the village of Mitzne functioned as a metaphor for unaddressed past pain that resurged into the present with unpredictable consequences; the text exhibited postmodern features through hyperbolic irony, distorted intertextuality, and a distinctive grotesque that challenged unequivocal historical evaluations. M. Brynich effectively transformed his characters into witnesses of the “unspeakable return” of those whom the past should have permanently absorbed (Korol, 2023).

The stylistic and narrative features of the artistic reception of historical memory in contemporary Polish literature, and in selected related instances such as M. Brynich’s work, reflected the authors’ intent to expand the boundaries of traditional historical prose. Autobiographical and documentary elements were employed to infuse the texts with a sense of personal testimony and authenticity. Authors did not hesitate to adopt postmodern methods such as deconstruction, grotesque imagery, collage techniques, and symbolic allusions to question established historical canons. Places of memory, together with metaphors of ruins, mirrors, and ghosts, emerged as tacit witnesses to unhealed wounds, while

intertextuality and irony extended the reader's perception beyond conventional narratives of the past. Ultimately, these techniques prompted a collective inquiry into whether history could be apprehended as a singular sequence of events or whether it remained inherently partial and open to continual reinterpretation. Writers such as S. Srokowski, L. Orbitowski, S. Reńca, A. Szczypiorski and I. Ostachowicz, alongside the Ukrainian author M. Brynich, produced through their stylistic explorations and narrative experiments a multifaceted mosaic of memory that invited readers to critically engage with and re-evaluate historical conceptions.

Discussion

The comprehensive analysis demonstrated that the artistic reception of historical memory constituted a complex and multi-faceted phenomenon, encompassing not only the factual reproduction of the past but also its ethical, emotional, and cultural reappraisal. In the relevant texts, authors combined documentary evidence with fictional elements (including genres such as horror or grotesque), questioned linear historical narratives, and highlighted contradictory aspects of collective identity. Similar strategic approaches facilitated the uncovering of long-standing traumas and the addressing of the gaps in history, thereby promoting a deeper engagement with psychological and moral conflicts. A fragmented structure of memory, which simultaneously drew on archival materials and transcended the limits of realism, enabled writers to critically re-evaluate political ideologies and national myths. Consequently, these artistic approaches demonstrated literature's potential to foster an open dialogue regarding contentious historical issues and encouraged society to re-examine its established conceptions of the past.

Researcher K. Barski (2019) asserted that the naturalistic aesthetic in the novels of Łukasz Orbitowski provided a foundation for a more profound depiction of the social and moral

conflicts of the era. The study acknowledged the importance of realistic details while proposing their combination with elements of genre play to achieve a multi-dimensional interpretation of historical events. Research also emphasised that symbolic and fantastical elements could broaden the interpretative horizons of memory, even though K. Barski's concept prioritised the naturalistic approach. Convergence of views was evident in the thesis that a detailed portrayal of characters' existential experiences contributed to the actualisation of social problems and historical traumas. In contrast to the argument that exclusive naturalism ensured sufficient depth in the artistic reception of history, the study upheld the idea of synthesising documentary texture with a hypothetical artistic form. Such a vision anticipated the creation of a more flexible narrative structure, one capable of reproducing individual experiences alongside collective memory. Ultimately, the author focused on enhancing realistic veracity, while the study demonstrated that moving beyond naturalism provided a broader framework for a critical re-evaluation of the past.

Authors S. Buryła & J. Giebułtowski (2023) emphasised that representations of the Warsaw Ghetto in Polish literature were grounded in a combination of documentary foundations and subjective reinterpretations, which reflected the broader socio-political contexts. The present study placed additional emphasis on the ways in which artistic experimentation with genre forms deepened the understanding of historical memory related to the Second World War. Both approaches agreed that literary texts encompassed official and personal layers of interpretation, thereby enabling readers to grasp the ambivalence of wartime experience. S. Buryła & J. Giebułtowski maintained that primary attention should be given to archival material and direct testimony, whereas the present study argued for the productivity of incorporating elements of the fantastic and symbolic imagery. Both positions

ultimately acknowledged the central role of literature in coming to terms with the past; however, the study at hand demonstrated that broadening the narrative framework contributed to a more multidimensional reception of historical memory.

Researcher J. Kochanowski (2024) contended that everyday life in occupied Poland frequently remained outside the focus of official historical narratives, which prioritised global political and military developments. The present study recognised that such a narrowing of perspective might result in an incomplete rendering of historical memory, while stressing that creative interpretation could compensate for this analytical gap. The author agreed with the claim regarding the importance of archival materials and direct testimonies; nonetheless, this study proposed that the inclusion of symbolic or fantastical elements enabled a more layered comprehension of the traumatic experience of occupation. It was also underscored that literary texts, by combining realistic depictions of domestic life with imaginative authorial elements, constructed a more intricate portrayal of the era. In contrast, J. Kochanowski's concept placed primary emphasis on accurate descriptions of everyday reality. The author rejected the assumption that generic experimentation could productively convey the psychological depth of historical events, arguing that such practices risked compromising the authenticity of documentary evidence. Both approaches converged in their understanding that literature played a crucial role in reflecting on the reality of occupation; however, the present study demonstrated that the boundaries of historical memory could be extended through the use of unconventional artistic strategies.

A. Morawiec (2021) argued that Polish literature addressing genocide primarily focused on documentary precision and the direct depiction of traumatic events. Nevertheless, the present study placed emphasis on the notion that combining archival sources with symbolic

or fantastical elements enhanced the complexity of historical memory. While A. Morawiec acknowledged the crucial role of written testimony in the investigation of genocide, the current analysis demonstrated that artistic experimentation also possessed the capacity to reveal the subjective dimensions of collective trauma more profoundly. A. Morawiec did not share the view that genre experimentation contributed to expanding interpretive frameworks of the historical past, considering the classical realist form to be the most appropriate for conveying the tragedy of events. In contrast, the study maintained that moving beyond realism offered additional possibilities for the critical reassessment of official narratives and collective myths.

D. Stola (2021) noted that representations of the Holocaust in Polish literature were shaped by a societal need to confront difficult and painful aspects of the past, which were often silenced or simplified within official narratives. The present study supported the view that literary engagement with the Holocaust in the works of Polish authors revealed overlooked or uncomfortable dimensions of history, while also highlighting the importance of experimental genre forms. D. Stola primarily focused on realist approaches and documentary testimony, which he considered most effective in faithfully representing historical realities. Conversely, the current analysis argued that the incorporation of genre experimentation, including elements of horror and the grotesque, enabled deeper engagement with the psychological and emotional dimensions of historical trauma. While both agreed on the importance of literature as a tool of memory, this study explored a broader range of artistic strategies as a means of avoiding reductive interpretations and encouraging a multifaceted reception of historical events.

K. Yanev (2021) observed that the reception of historical trauma in I. Ostachowicz's novel "Night of the living Jews" unfolded through the intersection of horror aesthetics and elements of camp, allowing the author to critically

reframe the Holocaust using unconventional genre techniques. The present study likewise emphasised that literary representations of historical memory in the works of contemporary Polish writers often relied on genre experimentation, particularly through horror and the grotesque. However, it was stressed that such a strategy aimed primarily at foregrounding ethical and psychological aspects of historical trauma, rather than merely engaging in aesthetic play. While K. Yanev focused on the entertainment and ironic potential of blending camp with horror, the current analysis argued that this genre interaction contributed to a more serious reflection on historical memory by drawing attention to silenced and difficult episodes of the past. Both studies recognised the value of combining diverse genre forms in representing the Holocaust in contemporary Polish literature, although they diverged in their assessment of the functions these genre elements served in cultivating a critical perspective on the past.

Conclusions

The analysis of the novels by S. Srokowski, L. Orbitowski, S. Reńca, A. Szczypiorski and I. Ostachowicz demonstrated that Polish literature actively addressed issues of moral and political responsibility, society's involvement in the tragic events of the Holocaust and the Polish-Ukrainian conflict, and contentious aspects of the post-war activities of the "cursed soldiers". The authors deliberately employed a range of genre techniques (from realism to horror) to emphasise the traumatic nature of historical experience and the necessity of its re-evaluation in contemporary society. Moreover, the interaction of literature with other forms of memory (archives, oral histories, cinema) illustrated the multidirectional nature of historical experience and the need for a comprehensive representation of past events.

The study demonstrated that the stylistic and narrative features of Polish literature from

the late twentieth to the early twenty-first century tended to combine documentary sources with autobiographical and fantastical elements. The use of motifs such as ruins, ghosts, and mirrors as metaphorical images served to underscore the uncertainty and traumatic nature of historical memory while foregrounding its psychological and emotional dimensions. In the works under analysis, considerable attention was devoted to the internal conflicts of characters confronted with moral dilemmas and the necessity of personally defining their stance in relation to controversial events of the past. Writers also blurred the boundaries between reality and imagination, between fact and artistic invention, which enabled them to highlight the contradictions and complexities of official historical narratives. The authors not only depicted historical facts but also explored questions of moral responsibility and both individual and collective agency through diverse means. This underscored the complexity and ambiguity of the past, drew attention to the traumatic nature of historical events, and stressed the importance of their critical reconsideration in the contemporary context.

Thus, contemporary Polish literature addressing historical memory fulfils not only an aesthetic function but also ethical and socio-cultural roles. Writers actively integrated documentary elements with experimental genre forms, enabling the rethinking and deconstruction of dominant historical narratives. In this way, literature became an effective tool for engaging with difficult and controversial aspects of the past, fostering critical thinking and promoting intercultural dialogue around shared historical traumas.

Future studies might broaden the analytical scope by examining literary works from other periods of twentieth- and twenty-first-century Polish history, particularly the era of communist rule and the societal transformations that followed its collapse. They could also enhance the comparative analysis of Polish and

Ukrainian literary contexts, offering a more comprehensive understanding of the strategies used to engage with traumatic memory. Particularly promising are studies that compare national strategies of remembrance with the experiences of other Central and Eastern European countries that underwent similar historical traumas in the twentieth century.

Acknowledgements

None.

Funding

None.

Conflict of Interest

None.

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Рецепція історичної пам'яті у творах сучасних польських письменників

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Анотація. Метою роботи було визначити, яким чином автори польської прози кінця XX – початку XXI століття віддзеркалювали минуле й моделювали колективний досвід, спираючись на різноманітні архівні джерела й художні прийоми. В дослідженні було застосовано міждисциплінарний підхід, що поєднував порівняльно-історичний аналіз, рецептивну естетику, контекстуальну інтерпретацію художніх текстів, культурологічні методи вивчення колективної пам'яті та компаративний розгляд схожих сюжетів в українській літературі. Аналіз засвідчив, що польські письменники трансформували історичний матеріал через введення жанрових експериментів, включно з елементами «горору» й фантазмагорії, які підкреслювали незавершеність суспільної травми та стимулювали розширену рефлексію читачів над феноменом колективної моральної вини, впливаючи на формування національної ідентичності. У працях Станіслава Сроковського, Лукаша Орбітовського, Анджея Щипіорського, Ігоря Остаховича та Себастьяна Реньки відзначався контраст між документальною основою (архіви, свідчення) й авторськими психологічними й міфотворчими прийомами, що створювали простір для поліваріантного осмислення минулого, а також висвітлювали моральні дилеми, породжені різновекторними історичними інтерпретаціями. Результати також продемонстрували, що залучення образів привидів, зомбі чи інших маркерів «повернення мертвих» слугувало метафорою незавершених історичних конфліктів, які потребували актуального переосмислення та віддзеркалювали радикально суперечливі аспекти національної пам'яті, особливо стосовно табуйованих питань колабораціонізму чи післявоєнного підпілля. Рецепція історичної пам'яті в текстах польських письменників не обмежувалася констатацією фактів, а перетворювалася на складний процес інтерпретації, який поєднував документальні свідчення, авторські інтуїції та соціокультурні стереотипи, водночас пропонуючи нові погляди на взаємодію офіційної та маргінальної пам'яті. Практичне значення цих напрацювань полягає в можливості ефективно використовувати здобуті висновки для подальших літературознавчих і культурологічних студій, а також упроваджувати відповідні матеріали під час створення освітніх програм, міждисциплінарних дослідницьких проєктів і суспільних дискусій, що сприяли б подальшому критичному оновленню історичної свідомості та глибшому, тривалому і перспективному розширенню демократичної культури пам'яті

Ключові слова: Друга світова війна; голокост; горор; постмодернізм; трагічність



Cognitive processing of visual metaphor from the perspective of Conceptual Metaphor Theory

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Abstract. The relevance of this study lies in the ongoing debate surrounding the cognitive processing of visual metaphor within the framework of modern cognitive linguistics, particularly Conceptual Metaphor Theory (CMT). The aim of the article was to develop and test an algorithm for analysing visual metaphors based on a modified version of CMT, drawing on the ideas of Z. Kövecses and taking into account the influence of domain visualisation as well as the characteristics of relative and situational analogical mapping in cognitive processing. The study employed a comprehensive methodology that integrated the analysis of visual metaphor according to domain visualisation criteria, classical cognitive analysis of conceptual metaphor, and an analytical model grounded in the extended and modified version of CMT proposed by Z. Kövecses. The research identified that the sequential cognitive operations involved in processing unconventional visual metaphors include: establishing the visualised source and target domains of the metaphor; identifying metonymic connections in the referent and correlate that provide access to the metaphor's conceptual domains; identifying the conventional component within the metaphor's conceptual structure – namely, the “general-level” conceptual metaphors; identifying the main meaning foci of the sources used for conceptualising aspects of the target domains; identifying unconventional mappings – meaning components in visual metaphor that go beyond conventional conceptualisations, based on the

Suggested Citation:

Kravchenko, N., & Yudenko, O. (2024). Cognitive processing of visual metaphor from the perspective of Conceptual Metaphor Theory. *International Journal of Philology*, 29(1), 58–69. doi: 10.31548/philolog/1.2025.58.

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cognitive strategies of extension, elaboration, and completion; and deriving the overall meaning of the metaphor through the integration of conventional and unconventional mappings. An approach that applies an extended version of Z. Kövecses's Conceptual Metaphor Theory to the analysis of non-conventional fusion visual metaphors with relational mapping – one of the most cognitively complex types – enhances understanding of how metaphorical images are visualised and cognitively processed through both conventional and unconventional conceptualisations

Keywords: visual advertising; unconventional metaphor; meaning focus of the source; cognitive strategies; unconventional mappings; conventional conceptualisation

Introduction

This research is relevant as it addresses a complex and still-contested issue within cognitive linguistics – the cognitive processing of visual metaphors – by proposing a structured and theoretically grounded analytical framework. By extending Conceptual Metaphor Theory (CMT), particularly incorporating the modifications proposed by Z. Kövecses, the study responds to the need for more nuanced analytical tools capable of capturing both conventional and unconventional metaphorical mappings in visual contexts. The proposed algorithm integrates of domain visualisation and analogical structures, offering a detailed sequence of cognitive operations involved in interpreting fusion metaphors with relational mappings – among the most cognitively demanding types. In doing so, the study not only advances the theoretical understanding of visual metaphor processing but also provides practical analytical tools applicable to disciplines such as visual communication and cognitive linguistics.

The application of cognitive processing frameworks to visual messages, and particularly to visual metaphors, remains one of the most debated topics in modern cognitive linguistics. Researchers have attempted to interpret visual metaphors through the lens of Conceptual Integration Theory, constructing conceptual network structures based on the features of integrating visualised input spaces (Kravchenko, 2025). Some studies as L. Lagerwerf *et al.* (2023) and N. Kravchenko *et al.* (2024), have

also explored visual metaphorical imagery from the perspective of Relevance Theory including within multimodal contexts (Forceville, 2020). The explanatory mechanisms of Relevance Theory are integrated into the algorithm for processing visual metaphor in F. Yus's (2023) conceptual upload model, in which the characteristics of the visual-conceptual interface – the first stage of metaphor processing – guide the adjustment of conceptual information in the second, inferential phase of interpretation.

The cognitive processing of visual metaphors based on Conceptual Metaphor Theory remains an under-researched area in modern cognitive linguistics. This is primarily due to the multilayered and ambiguous nature of visual metaphors, which complicates the identification of systematic correspondences between source and target domains. In many cases, only one domain is explicitly presented, or domains are metonymically indicated by a specific visual detail. A visualised element may provide access to multiple conceptual domains – both source and target – simultaneously. Visual metaphors may also contain details that provoke unexpected interpretative developments. Furthermore, a general rule of visual metaphor coding is that the visualised source and target domains must exhibit sufficient similarity to allow for analogy, while maintaining enough difference to prevent a literal interpretation. At the same time, semantic anomaly often supersedes analogy.

An underexplored aspect of visual metaphor interpretation is the analysis of visual metaphors involving different types of analogical mapping – structural, attributive, relational, and situational – as well as the cognitive processing of non-conventional visual metaphors through the application of Z. Kövecses's concept of the meaning focus of the underlying conventional metaphor, in combination with the cognitive strategies of elaboration, extension, and combination. This article seeks to address this gap by identifying how the conventional component of a metaphor is enriched with contextually induced meanings, resulting in a non-conventional visual metaphor. The proposed approach applies an extended version of Z. Kövecses's Conceptual Metaphor Theory to the analysis of non-conventional fusion visual metaphors with relational mapping – one of the most cognitively complex types – thereby contributing to the novelty of the study.

The aim of the article was to propose and test an algorithm for analysing visual metaphors from the perspective of a modified version of Conceptual Metaphor Theory, taking into account the influence of the type and features of conceptual domain visualisation on cognitive processing. To achieve this aim, the following research tasks were set: (1) to determine the type of visual metaphor based on the method of domain visualisation and to categorise the metaphor according to the type of mapping; (2) to identify the cognitive operations that enable access to the conceptual structures underlying the visual metaphor; (3) to identify the conventional conceptualisations and the components of the metaphor's meaning that go beyond conventional interpretation through the application of cognitive strategies of extension and elaboration.

Literature Review

Studies addressing the interpretation of visual metaphors from the perspective of Conceptual Metaphor Theory (CMT) remain scarce, and

those that do exist tend to focus predominantly on multimodal communication, particularly cinematic metaphors (Bort-Mir *et al.*, 2020; Bort-Mir & Bolognesi, 2022; Forceville, 2024). An exception is Z. Kövecses's (2022, p. 15) monograph, in which the author proposes that “the comprehension or interpretation of all of these visual experiences, including sign-like and non-sign-like alike, makes use of the same metaphorical processing mechanisms”, concluding that “the visual metaphors that are evoked by visual experiences can be based either on correlations or resemblance”.

The theoretical foundation of this article comprised: (a) the core principles of Conceptual Metaphor Theory; (b) its modified version as proposed by Z. Kövecses; (c) selected elements of visual metaphor classification that establish the relationship between the method of domain visualisation and the characteristics of mapping between conceptual domains; and (d) the classification of metaphors by type of mapping. Within the CMT framework, a conceptual metaphor is understood as a set of mappings between a source domain and a target domain, wherein “the target domain A is comprehended through a source domain B based on a set of mappings that exist between elements of A and elements of B. To know a conceptual metaphor is to know this set of mappings” (Kövecses, 2002, p. 29). For the purposes of this study, particular emphasis is placed on aspects of CMT relating to the cognitive mechanisms of mapping, highlighting, and entailment. Mapping is understood as a systematic set of correspondences between the elements of the source and target domains (Lakoff, 1993, p. 210). Cognitive highlighting refers to those components of the target domain that are made more salient through the application of specific elements of the source domain (Lakoff & Johnson, 1980; Kövecses, 2002). Entailments are the implications that logically follow from these mappings and highlightings, extending beyond simple correspondences to specify the broader

consequences of the metaphorical comparison (Lakoff & Johnson, 1980, pp. 89-91).

At the same time, certain metaphors – despite containing conventional components in the form of higher-level conceptual metaphors – are difficult to describe using the classical version of Conceptual Metaphor Theory (CMT). The semantic structure and discursive behaviour of such metaphors “cannot be captured by metalinguistic tools aimed at exclusively discovering regular characteristics” (Dobrovolskij & Piirainen, 2005, pp. 355-356). This applies to a significant portion of visual metaphorical images.

One attempt to address this issue is the modified version of CMT proposed in the works of Z. Kövecses (2000b, p. 82). Z. Kövecses’s approach involves mediating the mapping between the source and target domains of a conceptual metaphor through the identification of one or more meaning foci within the source domain of a higher-level metaphor. “The target inherits the main meaning focus (or foci) of the source” (Kövecses, 2000a, p. 82), allowing the schematic conceptual metaphor to be refined through new mappings and clarifying how the meaning of a specific metaphor is derived from its conventional, higher-level counterpart.

In addition to the notion of meaning focus, Kövecses’s principles concerning the cognitive strategic processing of the base metaphor are essential for the interpretation of visual metaphors. Specifically, the author identifies several cognitive strategies or devices used to transform conventional metaphors into novel ones. For the purposes of this article, the strategies of combining, extending, and elaborating are of particular relevance. Combining, as defined by Z. Kövecses (2002, pp. 47-49), refers to the capacity of a single metaphorical expression (in this case, a visual metaphor) to activate multiple higher-level conventional metaphors. Extending a conventional metaphor involves introducing previously unused elements into the source domain. Elaboration entails the

development of new, unconventional elements within the source domain. In this process, the target “connects back” to the source, acquiring additional knowledge structures derived from both activated and newly introduced elements, thereby enabling what Z. Kövecses (2005, p. 56) terms “target-induced creativity”.

As the object of analysis is a visual metaphor – where the method of domain visualisation plays a significant role in cognitive processing – this article employs the classification of visual metaphors introduced by M.O. Peterson (2019) to determine the type of visualisation involved. M.O. Peterson identifies seven categories in this regard: Identification – only one domain is visualised, while the other is represented verbally; Pairwise juxtaposition – both source and target domains are visually represented as separate entities; Categorical juxtaposition – the source domain is placed among a set of target elements, establishing a categorical relationship (Peterson, 2019, p. 77); Replacing juxtaposition – one of a set of similar objects is replaced by another object from the same series (Peterson, 2019, p. 79); Replacement – one domain is neither visualised nor textually represented, requiring the viewer to infer it through contextual cues; Fusion – source and target images are blended into a hybrid, unified gestalt image; Replacing fusion – one domain or part of it is replaced by emojis.

In addition to the manner in which domains are visualised, the cognitive processing of a visual metaphor also depends on the type of mapping involved, which refers to the projection of features and properties from the source domain onto ontologically related structures in the target domain. This study adopted the taxonomy of analogical mapping subtypes proposed by L. Belekova (2001, p. 148), which is based on the fundamental cognitive process of reasoning by analogy. The taxonomy includes the following types: attributive mapping – the transfer of features or attributes from the source domain to the target domain; Relational

mapping – the transfer of relationships between elements within the source and target domains; Situational mapping – the transfer of entire situations from the source domain to the target domain.

Relational mapping is the most complex form of interpretation, as it involves tracing “similar emotions, feelings, or states in both the source and target domains” (Belekhovala, 2001, p. 149). A particularly frequent subtype of relational mapping is the mapping of emotional states, which is highly relevant in the context of visual metaphors in advertising, where the primary aim is often to elicit an emotional connection with the audience. In such metaphors, where emotional impact is central, relational mapping tends to be one of the most common cognitive operations. However, due to the richness of visual detail, this type of mapping frequently occurs in combination with other types – such as attributive and situational mapping – thereby complicating and enriching the cognitive processing of the metaphor.

Materials and Methods

The visual metaphor selected for analysis originates from the Starbucks brand, the world's largest international coffeehouse chain. The advertisement containing the metaphor is publicly accessible online. This particular metaphor was chosen because, although unconventional in its visual construction, it contains a conventional component – namely, general-level conceptual metaphors – making it suitable for analysis within the framework of the modified version of Conceptual Metaphor Theory (CMT).

The comprehensive research methodology integrated: (a) an analysis of the visual metaphor based on the method of domain visualisation; (b) a classical conceptual metaphor analysis, enabling the establishment of a systematic set of mappings between the source and target domains; (c) a cognitive analytical

model grounded in the modified version of Z. Kövecses's CMT, which facilitated the identification of meaning foci within the conceptual scope of the source domain and their projection onto the target. This model also employed cognitive strategies such as extension, elaboration, and combination to reveal unconventional conceptual components that extend beyond the boundaries of the general-level metaphor.

The research followed a step-by-step algorithm designed to uncover the cognitive mechanisms involved in processing visual metaphors. The first stage involved identifying the visualised source and target domains, thereby establishing the basic metaphorical structure. This was followed by an analysis of the degree of alignment between the visual representation and the corresponding conceptual domains, which served to determine whether the metaphor adhered to conventional mappings or introduced novel elements. Next, a conventional general-level metaphor was selected from the Master Metaphor List compiled by G. Lakoff *et al.* (1991), which functioned as a cognitive anchor for interpreting the metaphor. The study then identified the primary meaning foci from the source domain that were activated in the conceptualisation of the target domain, enabling a more nuanced understanding of the metaphor's internal structure. In the fifth stage, these projections were analysed and justified based on the type of analogical mapping used in constructing the metaphor. The next step involved identifying any unconventional mappings, which represent additional components of meaning that arise from the application of cognitive strategies such as extension, elaboration, and addition – strategies that often contribute to the metaphor's novelty and complexity.

Subsequently, a second conventional general-level metaphor – introduced through the strategy of addition – was identified, along with its relevant meaning foci projected onto the target. This step led to the justification of a

second type of analogical mapping, which further enriched the metaphor's interpretative depth. The study synthesised all conventional and unconventional mappings to derive the integrative meaning of the visual metaphor, offering insights into the layered nature of cognitive processing within complex metaphorical constructs.

Results

The Starbucks brand advertisement depicts coffee cups in which the cream is shaped like a Christmas tree. Accordingly, the visualised target domain is the coffee, while the source domain is the Christmas tree, supported by visual details such as the form of the cream and decorative elements adorning it (Fig. 1).

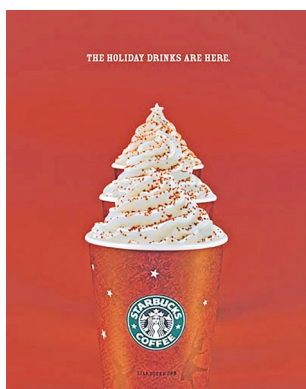


Figure 1. Starbucks Coffee

Source: Pinterest (n.d.)

Based on the relationship between the visualised domains, the metaphor represents a fusion type, in which two images merge into a single visual gestalt. Access to the conceptual structure underlying the visual metaphor is achieved through metonymic connections between the referent and the correlate. In the referent–target domain, metonymy is based on a cause-and-effect relationship between the Christmas tree and the holiday; in the correlate–source domain, metonymy connects the cream with the drink (coffee). These metonymic

associations, which provide access to the relevant conceptual domains, form the basis of the metaphor “Holiday is Starbucks Coffee”. In terms of mapping type, the visual metaphor constitutes a form of relational mapping, as it implies the projection of abstract relationships such as joy, happiness, and festive spirit. Through the source domain, the drink is conceptualised as a metaphor for celebration and emotional well-being, establishing an affective connection between the product and its perception as part of a festive experience. This interpretation is further supported by the verbal anchor in the advertisement: “The holiday drinks are here”.

Relational metaphors are among the most cognitively complex to explain in terms of semantic behaviour, particularly regarding the correspondences between source and target domains in the underlying conceptual metaphor. In such metaphors, the source and target are linked through cause-and-effect relationships, where the shared properties relate to emotions, feelings, and psychological states. Drawing on the Master Metaphor List compiled by G. Lakoff *et al.* (1991) and the conceptual metaphors of emotion proposed by Z. Kövecses (2000a), two global-level conceptual metaphors can be identified as underpinning the metaphor “Holiday is Starbucks Coffee”: (a) HAPPINESS IS A FLUID IN A CONTAINER (Kövecses, 2000a, p. 24), and (b) CHANGE OF STATE IS CHANGE OF LOCATION (Lakoff *et al.*, 1991, p. 4). The simultaneous activation of these two basic conceptual metaphors corresponds to one of the cognitive strategies outlined by Z. Kövecses – namely, the strategy of combining (Kövecses, 2002, pp. 47-49), whereby a single metaphorical expression can evoke two or more conceptual metaphors. The mappings associated with the metaphor HAPPINESS IS A FLUID IN A CONTAINER enable the identification of meaning foci in the source domain, which are used to conceptualise aspects of the target domain, as illustrated in Table 1.

Table 1. *HAPPINESS IS A FLUID IN A CONTAINER: Mappings of the conceptual metaphor*

Source (S): A FLUID IN A CONTAINER	Target (T): HAPPINESS
1. A fluid can fill a container, such as a cup	1. Happiness as an emotional state can “fill” a person
2. A fluid can be a source of pleasure, satisfaction and energy	2. Happiness is an emotional state associated with pleasure and satisfaction
3. The liquid in the container has a certain volume that can be measured	3. Happiness can be perceived as something measurable, for example, one can be “very happy” or “a little happy”, that is, it can vary in level or intensity
4. The fluid is dynamic; it can oscillate and move inside the container	4. Happiness is often unstable and changeable, it can change depending on life events or a person’s internal state

Source: *author’s development*

In the conceptual metaphor HAPPINESS IS A FLUID IN A CONTAINER, the primary meaning focus of the source domain used to conceptualise the target domain is that a fluid can be a source of pleasure, satisfaction, and energy. The projection of this focus onto the target highlights a component that explains the conventional element of the metaphor “Holiday is Starbucks Coffee”. This projection suggests that consuming coffee, like the experience of happiness, brings a sense of fulfilment, vitality, and enjoyment – aligning with the symbolic representation of coffee as an essential part of festive experiences. The metaphor blends two experiences that “fill” a person with happiness. Just as coffee fills a cup, providing satisfaction and stimulation, a holiday fills the emotional “container” with relaxation and joy. This links back to the metaphor of happiness as a fluid in a container – where the container symbolises one’s emotional or psychological state during a holiday. Thus, through the conventional component – the general-level metaphor HAPPINESS IS A FLUID IN A CONTAINER – the metaphor “Holiday is Starbucks Coffee” conceptualises the holiday experience as a drink that “fills up” or “refreshes” the individual through the idea of a container holding happiness. At the same time, the conventional metaphor does not exhaust the full meaning of “Holiday is Starbucks Coffee”. Additional components are generated through contextually induced cognitive strategies of expansion and elaboration.

The expansion strategy introduces a new fragment of knowledge related to the source domain A FLUID IN A CONTAINER – for instance, “creates a special holiday mood” – which is visually reinforced by the fusion metaphor, in which the cream on the coffee is shaped like a Christmas tree. Elaboration develops this fragment into the idea of “a transition from everyday life to a festive atmosphere, from an ordinary setting to a holiday one”: the emotional state triggered by a cup of aromatic coffee transports the individual into a context associated with joyful events and memories.

Thus, the relational mapping – consisting of correspondences between the source and target domains based on the shared emotional component – is enriched by situational mapping. Through the combining strategy, another conventional component is introduced into the metaphor “Holiday is Starbucks Coffee”, namely the general-level metaphor CHANGE OF STATE IS CHANGE OF LOCATION. This metaphor involves the image schema of a Path: a transformation from ordinary life to a festive setting and a special emotional state. The connection between “Holiday is Starbucks Coffee” and the basic conceptual metaphor CHANGE OF STATE IS CHANGE OF LOCATION is grounded in the fact that both metaphors involve transitions between states or conditions – a central feature in both literal and figurative interpretation. The mappings of CHANGE OF STATE IS CHANGE OF LOCATION

allow for the identification of the meaning focus or foci within the source domain that serve

to conceptualise aspects of the target domain, as shown in Table 2.

Table 2. *Change of state is change of location: Mappings of the conceptual metaphor*

Source (S): CHANGE OF LOCATION	Target (T): CHANGE OF STATE
1. A change of location implies a path from one place to another, that is, a physical movement and direction	1. A change of state also implies movement from one state to another (from sadness to happiness, from dissatisfaction to satisfaction), a qualitative change
2. A change of location reflects the idea of transformation - it involves the physical transition of an object/subject through space	2. A change of state is a process of transformation of condition
3. A change of location involves the means of movement from one location to another to reach the desired location	3. A change of state involves means/ways of changing the state

Source: *author's development*

The key meaning foci of the source domain in the conventional metaphor used to conceptualise the target domain are: (2) the idea of transformation, and (3) the means of achieving it. The source is enriched with new fragments of knowledge through the application of the cognitive expansion strategy. When comparing the conceptual metaphor CHANGE OF STATE IS CHANGE OF LOCATION with the new metaphor “Holiday is Starbucks Coffee”, the source domain – Starbucks Coffee – is adapted to signify a transition from one condition (e.g. low energy, fatigue) to another (e.g. high energy, elation, positive emotions), functioning as a metaphorical shift from an ordinary state to an elevated one.

In the metaphor “Holiday is Starbucks Coffee”, the act of drinking coffee is interpreted as a metaphorical transition from the mundane to an enhanced, festive state. Correspondingly, the target domain – Holiday – is conceptualised as a change of state, realised through target-induced creativity, which metaphorically adjusts the source in line with the cognitive scope or “range of the target”. The holiday thus signifies a shift away from one mental or emotional “location” (e.g. work, stress) to another, more desirable “location” (e.g. relaxation, pleasure). This represents a transformation from a state of routine, fatigue, or stress to one of joy and celebration – akin to moving from one physical location to another.

Therefore, the conceptual metaphor CHANGE OF STATE IS CHANGE OF LOCATION supports the mapping of a shift or transition from one mental, emotional, or physical condition to another, positioning both holiday and coffee as metaphorical vehicles that facilitate movement from an undesirable state (work stress, exhaustion) to a desirable state (relaxation, vitality, festivity). The analysis of visual metaphor in this study is grounded in a modified version of Z. Kövecses’s approach to Conceptual Metaphor Theory. The model proposed here synthesises key insights from Kövecses’s extensive body of work into a structured, step-by-step analytical algorithm, allowing for detailed examination of both conventional and unconventional metaphorical mappings. While Kövecses’s contributions remain central to this research, it is also important to acknowledge alternative models that have sought to address the limitations of the classical CMT framework.

One such alternative is the three-dimensional model proposed by E. Šorm & G. Steen (2018), which conceptualises metaphor as operating on three distinct but interconnected levels: (1) denotative meaning, constructed at the level of verbal or visual expression; (2) connotative meaning, emerging through conceptual mappings; and (3) pragmatic meaning, derived within the communicative and contextual dimension. While these

models offer valuable insights, they primarily focus on the descriptive dimensions of metaphor meaning or on the interaction between levels of meaning. In contrast, the present study proposes a systematic method for uncovering the underlying cognitive strategies that govern the interpretation of visual metaphors – particularly those that extend beyond conventional mappings. Z. Kövecses's modified CMT model introduces mechanisms such as extension, elaboration, and combination, which facilitate the identification of novel conceptual components not typically represented within generalised metaphorical structures.

Among other studies contributing to the modification of Conceptual Metaphor Theory in the analysis of visual metaphors, it is worth mentioning the work of H. Pokojná *et al.* (2025), which examines models of visual conceptual metaphors used in scientific infographics. This study identified recurring patterns of visual metaphor across domains such as biomedicine and climate science, and highlights the prevalence of ontological and orientational metaphors in translating complex scientific information. Also notable is the research by S. Cao *et al.* (2023), which empirically investigated how forms of verbalisation influence the cognitive processing of different pictorial metaphor structures in advertising – such as fusion, juxtaposition, and literal images. Further relevant is the study by P. Niu (2019), which confirmed that visual metaphors can function as direct manifestations of conceptual metaphor without linguistic mediation. Similarly, Z. Xu *et al.* (2023) underscored the need for further research into the cognitive processing of visual metaphors and the influence of varying verbalisation strategies. D. Niño & G. Serventi (2014) critiqued the limitations of standard CMT in accounting for visual metaphor phenomena and propose the adoption of a cognitive type model as a potential remedy.

Unlike other modified versions of CMT, the model proposed in this study explicitly

addresses the cognitive processing challenges posed by visual metaphors, offering a more nuanced understanding of how meaning is constructed and layered. The analytical algorithm developed here operationalises the metaphor processing mechanism through a structured sequence of interpretative steps: identification of domains; domain alignment; selection of a conventional metaphor; identification of meaning foci; justification of mappings; detection of unconventional mappings based on cognitive strategies (extension, elaboration, addition) that contribute to metaphorical novelty and complexity; introduction of a second conventional metaphor via the strategy of addition, and mapping its projections; synthesis of interpretation, integrating all conventional and unconventional mappings.

This analytical framework is particularly effective in the examination of complex visual metaphors employing relational or situational types of analogical mapping – forms that remain notably underexplored in existing models. Thus, while other approaches provide useful macro-level descriptions of meaning construction in multimodal metaphors or focus primarily on descriptive or typological aspects, the model presented here contributes a micro-level, cognitively grounded method for tracing both conventional and emergent metaphorical meaning – an aspect not sufficiently addressed in other current adaptations of CMT.

Conclusions

Based on the modified version of Conceptual Metaphor Theory, this article identifies the conventional and unconventional components of the visual metaphor “Holiday is Starbucks Coffee”, which is classified as a fusion metaphor in terms of domain visualisation and as a relational and situational metaphor in terms of analogical mapping.

The conventional components of the metaphor are the general-level conceptual metaphors HAPPINESS IS A FLUID IN A CONTAINER

and CHANGE OF STATE IS CHANGE OF LOCATION. The projection of the primary meaning focus from the first metaphor onto the target domain conceptualises holiday experiences as a drink that “fills” or “refreshes” the individual, grounded in the idea of a container holding happiness. The projection of meaning foci from the conceptual structure of the source domain in the second metaphor conceptualises the transition from an ordinary state to a festive one as a movement from a physical location associated with routine and work to another, more positive “location” associated with relaxation and enjoyment. Through the application of cognitive strategies of expansion and elaboration of the source foci from these conventional metaphors, new metaphorical mappings emerge, establishing further correspondences between the source and target domains. The holiday is

conceptualised as the emotional satisfaction derived from a cup of coffee; the transition from everyday life to a festive state associated with coffee drinking is interpreted as a break from routine; and the overall movement is toward a festive atmosphere or location. A perspective for further research is the analysis of visual metaphors from the perspectives of Relevance Theory and Conceptual Integration Theory, both of which offer alternative models for understanding how visual and conceptual structures interact in the interpretation of metaphor.

Acknowledgements

None.

Funding

None.

Conflict of Interest

None.

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Когнітивна обробка візуальної метафори в ракурсі Теорії Концептуальної Метафори

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Анотація. Актуальність дослідження зумовлена дискусійністю питання когнітивної обробки візуальної метафори в ракурсі сучасної когнітивної лінгвістики, зокрема Теорії Концептуальної Метафори. Метою статті було розробити та перевірити алгоритм аналізу візуальних метафор на основі модифікованої версії Теорії Концептуальної Метафори, спираючись на ідеї Кевечеса та враховуючи вплив на когнітивну обробку способу візуалізації доменів та особливостей релятивного та ситуативного аналогового мапування. У статті використана комплексна методика, яка об'єднала аналіз візуальної метафори на основі критерію візуалізації доменів, класичний когнітивний аналіз концептуальної метафори та модель аналізу, засновану на розширеній і модифікованій версії Теорії Концептуальної Метафори, запропонованої Кевечесом. Дослідження виявило, що послідовні когнітивні операції в обробці неконвенційної візуальної метафори включають: встановлення візуалізованих джерела та цілі метафори; визначення метонімічних зв'язків у референті та кореляті, які забезпечують доступ до концептуальних доменів метафори; виявлення конвенційного компонента в концептуальному обсязі метафори – концептуальних метафор «загального рівня»; визначення основних смислових фокусів у джерелах таких метафор, що використовуються для концептуалізації аспектів цільових доменів; виявлення нетрадиційних мапувань – компонентів значення візуальної метафори, що виходять за межі конвенційної концептуалізації, на основі застосування когнітивних стратегій розширення, розробки та завершення; виведення значення метафори на основі інтеграції конвенційних і неконвенційних відображень. Запропонований у статті підхід, що застосовує розширену версію теорії концептуальної метафори Кевечеса до аналізу нетрадиційних візуальних метафор-фьюжн з реляційним відображенням, поглибить розуміння взаємодії між способами візуалізації метафоричних образів та їх конвенційною і неконвенційною концептуалізацією у процесі когнітивної обробки

Ключові слова: візуальна реклама; нетрадиційна метафора; смисловий фокус джерела; когнітивні стратегії; неконвенційні відображення; конвенційна концептуалізація



Processing visual metaphors: How conceptual network type and cognitive focus shape interpretation

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Abstract. In contemporary multimodal communication, visual metaphors play a critical role in shaping persuasive messages across domains such as advertising, media, and public discourse. However, the cognitive mechanisms that govern their processing are still underexplored, particularly in relation to how structural and attentional factors interact during interpretation. The purpose of this study was to investigate how different types of conceptual integration networks – mirror and three-scope – interact with the cognitive focus of metaphor processing, with special attention to fusion and fusion-replacement types of visual metaphors. The analysis was grounded within the framework of Conceptual Integration Theory, combined with insights from visual metaphor typology and cognitive processing theory. The study revealed that the processing focus – especially comparison for opposition – has a more significant influence on the cognitive complexity of metaphor interpretation than either the type of visual metaphor or the structural type of conceptual network. Notably, when opposition is clearly visualised between conceptual domains, it substantially facilitates metaphor comprehension, even within more complex three-scope blends. This suggests that processing focus can override structural complexity in determining cognitive load. Moreover, the findings showed that visual complexity (e.g., fusion vs. fusion-replacement) does not independently account for interpretative difficulty; instead, it interacts with conceptual structure and relational focus. These insights have practical applications in advertising, environmental communication, and visual design. Understanding how oppositional focus and network type affect metaphor processing can help designers and communicators create visually engaging and cognitively efficient messages that enhance audience engagement and comprehension.

Keywords: metaphor; conceptual integration; visual advertising; “comparison for opposition” focus; mirror network; three-scope network; fusion

Suggested Citation:

Kononchuk, I. (2025). Processing visual metaphors: How conceptual network type and cognitive focus shape interpretation. *International Journal of Philology*, 29(1), 70-81. doi: 10.31548/philolog/1.2025.70.

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Introduction

In an era increasingly dominated by visual communication, the interpretation of visual metaphors has become a central concern for both cognitive science and linguistic research. Despite the ubiquity of such metaphors in advertising, digital media, and political discourse, their cognitive processing mechanisms continue to be underexplored, especially in the modern context. Due to an overload of visual stimuli, understanding how viewers make sense of complex metaphorical images is more relevant than ever. The present study addressed a critical research problem: how visual metaphors are processed cognitively when their interpretation requires the simultaneous activation of multiple conceptual domains, often without verbal support. Specifically, the study sought to identify how conceptual integration mechanisms operate in the processing of visual metaphors and how inferential processes, being guided by relevance and contextual knowledge, contribute to meaning construction.

The analysis of visual metaphors from the perspective of cognitive methodology is a relatively recent and insufficiently explored area within contemporary cognitive studies. Attempts to investigate the visual-conceptual interface and its impact on the cognitive processing of visual metaphors have been undertaken both from the perspective of cognitive linguistics and in an interdisciplinary format. B.J. Phillips & E.F. McQuarrie (2005) suggested that the level of cognitive effort required depends on the degree of complexity in the spatial distribution of source and target elements in a visual metaphor. This line of research was continued by G. Ventalon *et al.* (2020) and G. Ventalon *et al.* (2023), who emphasised that the spatial distribution of visual elements not only defines the type of visual metaphor but also affects the meaning operations required for its interpretation.

From a linguistic standpoint, visual metaphor processing has been studied through the lens of relevance theory and conceptual

metaphor theory. N. Kravchenko *et al.* (2024), for instance, focused on the inference of meaning in a visual metaphor as a multicomponent structure, involving the interaction of explicature, contextual assumptions, and implicatures based on ad hoc properties of the visually encoded source. Analogously, F. Yus (2023) analysed the inferential nature of visual metaphor comprehension, highlighting how relevance-guided interpretations emerge through the interaction of weak and strong implicatures. C. Forceville (2020) discussed the problematic aspects of the analysis of visual metaphors in the context of relevance theory, as well as the connection between the relevance-theoretic approach and Blending Theory (2020). In the context of Conceptual Metaphor Theory, non-verbal (visual and multimodal) metaphors were analysed by Ch. Forceville (2024), who proposed guiding principles for their identification and interpretation. These include the requirement for a clearly perceived identity relation between two elements – target and source – in such a way that their mapping yields a relevant, non-reversible interpretation ($A \text{ IS } B \neq B \text{ IS } A$), with at least one transferred feature (e.g., action, emotion, connotation, or valuation) making conceptual sense. H. Pokojná *et al.* (2025) analysed visual metaphors that are often used in science infographics, proposing a classification of the visual conceptual mappings. On an applied level, L. Bort-Mir & M. Bolognesi (2022), as well as L. Bort-Mir *et al.* (2020), conducted experiments where participants were asked to identify general-level structural metaphors underlying visually presented images, thereby linking specific visual cues to more abstract conceptual schemas. Z. Kövecses (2022) proposed a modified approach to metaphor analysis in CMT by identifying the foci of source meaning and applying this framework to the analysis of visual metaphors.

However, only a limited number of studies addressed the analysis of visual metaphors through the lens of Conceptual Integration

Theory (CIT), since research efforts tend to focus on clarifying how images can construct and represent conceptual metaphors previously identified in the literature based on the analysis of linguistic expressions, i.e., such an analysis is performed within the framework of conceptual metaphor theory. Despite the clear paucity of research in this area, the analytical tools offered by conceptual blending represent the best approach for the study of visual metaphorical imagery. This is because the cognitive processing of visual metaphors rarely stays confined to a set of directed mappings from a visually encoded source to a target; rather, it often involves multiple levels of meaning, emergent structures, and intricate associations that can be more accurately captured within the framework of conceptual networks.

Moreover, conceptual integration based on visual metaphors constitutes a bidirectional process, where visual and conceptual elements influence each other at all stages of blend formation. According to N. Kravchenko & O. Zhykharieva (2023), conceptual integration is shaped by such attributes of visual metaphors as colour with its symbolic connotations, colour contrast, shape, the salience of specific details, and their compatibility or incompatibility with each another and with the overall visual message. These visual parameters can prompt the adjustment, enrichment, or narrowing of activated knowledge structures. At the same time, through feedback mechanisms during the blending process, the visual elements themselves may acquire added, emergent meanings.

Notably, in studies of visual metaphors conducted within the framework of CIT, the analysis of visual metaphor tends to replicate the analysis of verbal metaphors, without adequately accounting for the specificities of conceptual integration in both its verbal and visual dimensions. Specifically, factors such as processing focus – a notion specifically developed to analyse visual metaphors – and the type of metaphor visualisation are presumed

to influence the cognitive processing of visual metaphor. To the best of our knowledge, these features have not yet been considered by scholars applying the Conceptual Integration Theory to the analysis of visual metaphors. The present study sought to address this gap.

The purpose of this study was to determine how the interaction between types of conceptual integration and cognitive processing focus influences the interpretation of visual metaphors. The objectives of the study were as follows:

1. To identify the processing characteristics of distinct types of visual metaphors (particularly fusion and fusion-replacement) in relation to the structure of conceptual networks (mirror and three-scope).
2. To analyse the role of cognitive focus (e.g., focus on opposition) in determining the complexity of metaphor interpretation.
3. To assess how visual complexity interacts with conceptual structure and attentional focus in the comprehension of metaphorical images.

Materials and Methods

The study focused on conceptual reconstruction of meaning processes in visual metaphors. It employed a qualitative cognitive-interpretive methodology based on Conceptual Integration Theory (CIT) (Fauconnier & Turner, 2002) to analyse two ecological visual metaphors. Two visual metaphors, freely available online, were selected for their rich conceptual and visual complexity and served as the material of analysis. They were analysed in terms of three key parameters: the type of visualisation, the cognitive processing focus, and the type of conceptual network. To ensure methodological consistency, the analysis of each visual metaphor proceeded through a multi-step algorithm, reflecting the cognitive-interpretive framework of Conceptual Integration Theory and its application to visual metaphor:

Step 1. Construction of the Conceptual Integration Network.

The primary method employed at this step was conceptual analysis, guided by CIT's framework of mental spaces, cross-space mappings, vital relations, and types of conceptual networks. This method was chosen due to its capacity for a nuanced description of how meaning is constructed across multiple input spaces in visual metaphors and how emergent meanings arise in the blended space. Each metaphor was examined in terms of input and generic spaces, the organising frame, and the emergent structure in the blend. To apply CIT systematically, the study also employed the structural typology of conceptual networks (simple, mirror, single-scope, double-scope, and multiple-scope) to determine how the organising frame is distributed across inputs. Particular attention was paid to the Mirror Network (Fauconnier & Turner, 2002, p. 122-126; Oakley & Pascual, 2017, p. 430-431), characterised by the presence of a shared organising frame across all input spaces and a single but shared identity, as well as the Multiple-scope (three-scope) Network, which was the focus of the analysis in the practical part of this study.

Step 2. Classification of the visual metaphor type.

Next, the metaphor was classified according to the mode of visualisation based on established typologies (Phillips & McQuarrie, 2004; Bünzli & Dillard, 2022). This step helped to determine the degree of visual integration between domains and predicted relative processing complexity. To establish connections between visual structures and conceptually integrated structures, this study applied a method that correlates the type of conceptual network with the type of visual metaphor. To identify the type of visual metaphor, the study adopted methods of visual metaphor classification from B.J. Phillips & E.F. McQuarrie (2004) and F. Bünzli & J.P. Dillard (2022), which distinguished visual metaphors according to the mode of visualisation. The basic three types include (a) Juxtaposition

(depicting both the source and the target domains simultaneously); (b) Fusion (integrating the domains into a single visual gestalt); and (c) Replacement (omitting one of the domains and replacing it with the other). Additionally, the study partially drew on the classification of M.O. Peterson (2019), who discussed the possibility of mixed types, an example of which was Replacing fusion (p. 76-79), which combined visualisation elements in fusion metaphors and replacement metaphors.

This typology was applied to correlate visual structure with the conceptual structure of integration networks, thereby offering a more holistic view of metaphor processing. Its use in research methodology was justified by the fact that according to B.J. Phillips & E.F. McQuarrie (2004, pp. 116, 118), the cognitive complexity involved in processing a metaphor was proportional to its visual complexity: juxtaposition metaphors were considered the least demanding cognitively, replacement metaphors the most complex, while fusion metaphors occupied an intermediate position.

Step 3. Determination of the cognitive processing focus.

The third stage involved identifying the type of relational focus guiding the metaphor interpretation. Processing focus (Phillips & McQuarrie, 2004, p. 119) refers to the type of relationship established between the metaphorical elements. In this vein, three types were distinguished: (a) Comparison for similarity, which involves identifying similarities between metaphorical elements, facilitating the inference of additional parallels; (b) Comparison for opposition, which entails contrasting metaphorical elements based on specific features, allowing the interpreter to draw inferences about further differences between the source and target domains; (c) Comparison for connection – this focus is based on establishing associative links between metaphorical elements, which activates broader associative networks connecting the source and target domains.

The present study designed the focus-of-processing analysis method to determine how focus influences the interpretation of metaphor in the conceptual network and to confirm B.J. Phillips & E.F. McQuarrie's (2004, p. 119) suggestion that the type of processing focus influences the degree of cognitive effort required for interpretation: comparison for contrast was considered the least demanding, comparison for connection was considered the most cognitively demanding, and comparison for similarity represented an intermediate level of complexity.

Results and Discussion

Before analysing visual metaphors from a CIT perspective, its components must be presented in greater detail, including the mental spaces involved in integration, the conceptual processes underlying cross-dimensional mappings, vital relationships, and types of conceptual networks. The set of mental spaces forming the integration network includes: (a) two or more input spaces, depending on the type of network, which provide the structural elements for integration; (b) a generic space, which contains abstract structures common to all input spaces and ensures general-level connections between them; (c) a blended space, where selected elements from each input space are projected, resulting in new knowledge structures that are not present in the input domains.

Cross-space mappings involve conceptual processes such as matching and counterpart connections, selective projection from the input spaces, composition, completion, and elaboration (Fauconnier & Turner, 2002, p. 47-48). Composition refers to the stage at which a new conceptual structure is formed in the blended space through the alignment and selective projection of matching elements from the input spaces. Completion is the subsequent phase, during which the initially composed structure is enriched with more elements, drawn from prior knowledge or experience. Elaboration

entails further development and specification of the new structure through detail enrichment (adding finer-grain elements to the blended space), expansion (applying the blend to new contexts or situations), and scenario building, among other processes.

Vital relations are conventional conceptual structures that serve as key conceptual connections between elements of the mental spaces. The primary vital relations identified by G. Fauconnier & M. Turner (2002, p. 101) include Cause-Effect, Part-Whole, Time, Space, Change, Identity, Representation, Role, Analogy, Disanalogy, Property, Category, Intentionality, Similarity, and Uniqueness. Types of conceptual networks include the simple, mirror, single-scope, double-scope, and multiple-scope networks. Mirror network proved especially relevant for the present study due to its shared organising structure – a feature typical of visual metaphors with consistent thematic identity. Considering that the two visualised domains – hemispheres – are merged into a single visual gestalt representing a spherical image of the planet Earth, in terms of its visual format, the metaphor can be classified as a fusion, based on the combination of domains (Fig. 1).



Figure 1. Ego/Eco

Source: R. Chidambaram (2020)

From the standpoint of the three possible cognitive processing foci, the metaphor most closely aligns with the comparison for opposition type since several elements of the two

visualised domains are clearly differentiated. These differences involve colour schemes, tonal contrasts, and the presence or absence of visual detail, which guide the cognitive processing towards identifying further – potentially conceptual – oppositions between the domains. In terms of the type of conceptual network, the visual image indexes a metaphor processed as a mirror network. This conclusion is supported by the following observations. On the one hand, the metaphor visualises two mental input spaces: Input Space 1 – the Ego-State (Earth after human impact) and Input Space 2 – the Eco-State (Earth in its pristine, pre-anthropogenic condition). On the other hand, both mental spaces share an organising frame – the planet Earth – which is visualised and, accordingly, conceptualised in contrasting states.

The two mental input spaces are connected through key conceptual connections – vital relations of Similarity, Identity, Uniqueness, and Change. Through the visual blending of the two input domains, which depict different states of the Earth, the vital relation of Similarity is compressed into Identity, which is further compressed into Uniqueness. Projections into the blended space preserve attributes from the generic space, which are reflected in each of the Inputs – such as the hemisphere shape, size, and container properties (the outer and inner parts of the Earth), thereby reinforcing the vital relation of Uniqueness associated with a single object, the Earth, within the blend.

The blended structure thus constructed conveys the idea: “Earth is unique; there is only one,” yet it emphasises that humanity can transform it into either a planet of life or a planet of death. This new structure is not present in either input space independently but emerges through the juxtaposition of their elements and is subsequently projected back into both mental spaces. The compression of vital relations – Similarity and Analogy – into Identity is achieved through cross-space mapping of elements from one input onto the other and

is supported by similar visual correlations: in both input spaces, continents, plants, animals, and other elements are depicted.

However, despite being grounded in analogies and shared elements, Identity splits into two distinct components, as the same elements are visually represented in significantly distinct ways across the two domains. In Input Space 2, continents are brightly coloured, while in Input Space 1, they appear darkened and veiled in soot and smoke. Oceans in Input Space 2 are vivid blues, whereas in Input Space 1, they are dark, blackened, and lifeless. Trees in Input Space 2 are green and thriving, while in Input Space 1 they are dead and charred. Input Space 2 features a multitude of animals and birds, while Input Space 1 shows a near-total absence of fauna – save for the silhouette of a lion resembling a shadow.

Such a splitting of a single identity into two hypostases confirms the classification of the metaphor as belonging to the mirror network type, and invokes, apart from the vital relation of Analogy, the relation of Disanalogy. The possibility of such relations was noted by Fauconnier and Turner, who stated that “Disanalogy is based on Analogy” (Fauconnier & Turner, 2002, p. 99). Through the vital relation of Disanalogy, Input Space 1 dynamically represents the state of the Earth after human intervention, while Input Space 2 represents the Earth before such intervention. Consequently, conceptual oppositions associated with the two input spaces – harmony vs. destruction, life vs. death – are projected into the blended space.

This stage of cognitive processing is preceded by metonymic compression within the blend. Through such compression, the visualised signs of destruction and death – the degradation of life forms, dull and dirty colours – come to stand for the conceptual domains of destruction and death. Conversely, the manifestations of harmony and life – the diversity of life forms, bright colours, etc. – stand for the conceptual domains of life and harmony.

Thus, at the composition stage of the blend, connections between elements from the mental input spaces are mapped into the blended space, even though such links were not explicitly present in the inputs. Specifically, the counterpart connections include mappings such as *eco* = preservation of the planet's uniqueness (characterised by animals, vegetation, and clean blue colours); *ego* = destruction of this uniqueness (characterised by degraded life forms and muddy brown hues of filth, waste, and decay).

Both mental input spaces are nevertheless united by the vital relation of Identity (one Earth, but in two different states), which is compressed into the vital relation of the Earth's Uniqueness. The relations established within the blend are then projected back onto the two contrasting states of the Earth before and after anthropogenic intervention, reconstructing both input spaces through the vital relation of Cause and Effect, accompanied by the decompression of the derived mappings: the *eco*-approach yields a flourishing planet, rich in biodiversity and characterised by green and blue colours; the *ego*-approach results in a darkened planet, marked by the absence or transformation of life forms and a lifeless muddy-brown colour palette. At the stage of cognitive processing associated with the Completion of the blend, the missing elements of the structure formed during the Composition phase are filled in. The interpreter's experience and background knowledge are activated at this stage through added visual cues – smoke-filled, ruined cities; factory chimneys releasing toxic waste; soot; and smoke. These elements are subjected to cognitive elaboration to complete the frame of human activity, which is associated with the *Ego* input. As a result, new elements are introduced into the blend, reinforcing the fundamental oppositions encoded within it, such as *Eco*-harmony vs. *Ego*-destruction and *Eco*-life vs. *Ego*-death. Thus, at the stage of Completion, the interpreter may once again activate the vital relation of Cause and Effect.

At the stage of Elaboration, the blend is dynamically developed into a scenario based on real-world causal relationships within temporal and spatial frameworks. Since the *Ego*-state of the Earth (after anthropogenic influence) is presented as one possible future trajectory, and the *Eco*-state, by contrast, is conceptualised in terms of the past (the Earth's primordial state, untouched by humans), then the temporal dimension of the blend acquires a prospective-retrospective axis, framing the metaphor as a reflection on the consequences of human choice. The *Eco*-state functions as a retrospective ideal – a lost harmony that once characterised the Earth – while the *Ego*-state is projected forward as a potential consequence of continued anthropogenic degradation. This temporal framing enables the blend to be elaborated into a cautionary scenario: the visual metaphor not only compares but implicitly warns, transforming the opposition between *Eco* and *Ego* into a narrative of moral and ecological responsibility. The emergent structure thus encourages the interpreter to engage in counterfactual reasoning and ethical evaluation, activating not only the conceptual opposition but also affective responses tied to fear, guilt, and hope. The metaphor becomes an implicit argument: the preservation of Earth's uniqueness depends on the predominance of *Eco*-oriented actions over *Ego*-driven exploitation.

Thus, the analysed visual metaphor is processed within the mirror network of conceptual integration. In such a network, one Identity is split into two opposing states, represented in the blend as the Uniqueness of the Earth. The analysis showed that the features of conceptual processing are determined, firstly, by the way in which the visual domains are organised into a single gestalt of the Earth, forming a fusion metaphor, and secondly, by the focus of processing "Comparison for opposition", with the opposition of visual elements within each domain.

To confirm these findings, the study considered another visual fusion metaphor, which

is analogous to the one analysed in terms of the focus of cognitive processing and the way the domains are visualised but differs in the type of conceptual network (Fig. 2).



Figure 2. Save the Rhino:

Nothing we do will ever bring them back

Source: 34 Of the most influential... (n.d.)

From the standpoint of a visual domain, the metaphor operates as a fusion, where elements from two distinct entities – a rhinoceros and a zebra – are combined, highlighting a contrast between them. This contrast-based comparison points to conceptual processing via a Mirror Network, characterised by a counterfactual relationship: an image of a single, exotic animal is cognitively separated into a zebra and a rhinoceros. The metaphor visually draws on two conceptual domains: the source (rhinoceros) and the target (zebra). A key visual detail – such as the device attaching the horn to the zebra – belongs to the target domain.

However, within the conceptual integration process, this attachment functions as a third, mediating input, enabling reconciliation between the divergent zebra and rhinoceros frames. That is, at the conceptual level, the mirror network is transformed into a three-scope one. The conceptual domain Zebra contributes to the blend the elements such as its body and striped appearance, while from the domain Rhinoceros the horn is projected with a metonymic compression of the horn into the rhinoceros. The Attachment itself symbolises artificial linkage between the two conceptual frames.

The primary incongruity arises from the horn's presence in the rhinoceros frame and absence in the zebra frame. Cognitive coherence is achieved by metonymically compressing the Attachment into the concept of “artificiality,” and decompressing this into the interpretive conclusion that the creation of a rhinoceros is merely an artificial construct. Key integration relations – such as Part-Whole – are compressed into a Disanalogy framed by Cause-Effect: the horn's presence does not transform a zebra into a rhinoceros. Through Completion, the integration conveys the futility of replicating a species, and through Elaboration, the meaning expands toward a narrative about wildlife conservation and the protection of endangered animals.

Although this metaphor uses a three-input conceptual integration model, it stays cognitively straightforward. As in the previous analysis of visual metaphor, processing difficulty is more influenced by the type of cognitive focus than by the metaphor's structural format. Here, the focus is on opposition, which tends to demand less cognitive effort than foci based on similarity or associative connection. While the replacing fusion form suggests moderate complexity, the overall processing ease reinforces the idea that focus type is more pivotal than metaphor type in determining interpretive load.

The analysis conducted within the framework of conceptual integration theory, considering the specifics of visual blending, suggests that the focus of cognitive processing may play a more decisive role in simplifying or complicating the integration process than the type of domain visualisation itself. This conclusion is based on the fact that interpreting the metaphor and inferring its meaning did not require significant cognitive effort, as the contrasting elements were clearly visualised, establishing the processing focus as comparison for opposition. As noted in the methodological section, this focus implies minimal complexity compared to the other two focuses – comparison for similarity and comparison for connection.

At the same time, from the standpoint of visualisation, the metaphor implements a fusion structure, a type generally associated with moderate cognitive load, which is greater than that required for processing a comparison metaphor. However, despite this, the metaphor was perceived as easy to process, thanks to the clear visual implications: the ego-approach should be replaced by the eco-approach to prevent the degradation and death of the planet. This enables the assumption that it is, in fact, the focus of processing that plays a decisive role.

The present study introduced a novel approach to analysing visual metaphors by systematically correlating the type of conceptual integration network with the focus of cognitive processing – a methodological and theoretical intersection that, to the best of our knowledge, has not been explicitly explored in prior research. While earlier studies have addressed various dimensions of visual metaphor, none have examined the specific interaction between network type and processing focus as the determinant of processing complexity. For instance, B.J. Phillips & E.F. McQuarrie (2004) explored how visual structure and type of comparison (similarity, opposition, connection) affect rhetorical impact, noting that opposition is the least cognitively demanding. However, the researchers did not apply Conceptual Integration Theory to explain how such comparisons function within integration networks. M. van Mulken *et al.* (2010; 2014) studied the correlation between the complexity of visual metaphors in advertising and their understanding and evaluation without resorting to the explanatory tools of the CIT. In terms of visual blending, J.M. Cunha & A. Cardoso (2019) emphasised the significance of a conceptual framework for creating visual blends. At the same time, in most studies, visual conceptual blending is performed as a description of the components of a visual blend and the way they are visually combined without considering the conceptual foundations of visual integration (Chilton *et al.*, 2019).

Among the studies that attempt to analyse visual metaphors from the standpoint of CIT, it is worth mentioning the study by T. Oakley & E. Pascual (2017), who examined conceptual blending in both verbal and visual metaphors in advertising, emphasising how different types of conceptual networks influence metaphor processing. At the same time, the researchers were primarily interested in mapping mechanisms and conceptual compression, without explicitly modelling processing focus or comparing processing effort across different network types. A. Tseronis & Ch. Forceville (2017) emphasised the persuasive potential of visual metaphors in multimodal argumentation but focused on pragmatic functions and not on internal cognitive effort or integration mechanics. In the same vein, Y. Zhao & H. Lin (2019) explored visual metaphors as an indirect method of persuasion in print advertising. D. Niño & G. Serventi (2014) proposed a systematic approach to the analysis of visual metaphors, with an emphasis on the classification of visual metaphors rather than on the cognitive processing in different types of networks, accounting for the type of visualisation and the focus of processing.

While previous literature provides robust classifications of visual metaphor types and preliminary explorations of CIT in multimodal contexts, the present study offered a fresh perspective on how conceptual blending can function not only in linguistic but also in visual contexts. By correlating visual metaphor types with conceptual network structures and processing foci, the study offered a comprehensive framework that accounts for both visual and cognitive dimensions of metaphor processing.

Conclusions

The study showed that processing focus is a stronger determinant of the level of processing complexity of visual metaphors than other parameters affecting their processing. Analysis of metaphors of two visual types – fusion and replacing fusion – showed that the focus of

comparison for opposition may be more influential than the type of domain visualisation, since such a focus significantly reduces cognitive effort in understanding the metaphor. Analysis of metaphors in terms of types of integration conceptual networks demonstrated that even though three-scope integrations are cognitively more demanding than mirror networks, the processing focus in both visual metaphors, namely comparison for opposition, plays a decisive role in facilitating integration processes in different types of networks. The present study was the first to demonstrate that visual complexity alone (e.g., fusion vs. replacement) does not fully account for cognitive complexity; it must be interpreted in conjunction with conceptual structure and relational focus.

The study confirmed that the process of interpreting visual metaphors is formed not only by the structural characteristics of the conceptual network, but also mainly depends on the cognitive focus, which determines the way the elements of the metaphor are compared. It was

found that the type of conceptual network, whether mirror or three-sector, affects the cognitive load, but it is the focus of comparison by opposition that greatly facilitates the integration of content, regardless of the visual complexity of the image. This approach opens new possibilities for more accurate modelling of the mechanisms of understanding visual metaphors by combining structural and procedural parameters. Further research may focus on expanding the typology of visual metaphors and cognitive focuses, as well as on the implementation of these models in interdisciplinary fields.

Acknowledgements

None.

Funding

None.

Conflict of Interest

The authors of this study declare no conflict of interest.

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Обробка візуальних метафор: як тип концептуальної мережі та когнітивний фокус формують інтерпретацію

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Анотація. У сучасній мультимодальній комунікації візуальні метафори відіграють вирішальну роль у формуванні переконливих повідомлень у таких сферах, як реклама, медіа та публічний дискурс. Однак когнітивні механізми, що керують їх обробкою, залишаються недостатньо вивченими, особливо стосовно того, як структурні фактори та чинники, що спрямовують фокус уваги, взаємодіють під час інтерпретації. Метою цього дослідження було вивчити, як різні типи мереж концептуальної інтеграції – дзеркальні та трисферні – взаємодіють з когнітивним фокусом обробки метафор, з особливою увагою до типів візуальних метафор типу злиття та злиття з елементами заміщення. Аналіз ґрунтувався на підходах концептуальної інтеграції, залучаючи типологію візуальних метафор та теорії їх когнітивної обробки. Дослідження показало, що фокус обробки – особливо «порівняння для опозиції» – має більш значний вплив на ускладнення процесу когнітивної інтерпретації метафори, ніж тип візуальної метафори чи структурний тип концептуальної мережі. За умови чіткої візуалізації опозиції між концептуальними доменами суттєво полегшується розуміння метафори, що стосується як відносно нескладних дзеркальних мереж, так і складних трисферних поєднань. Це свідчить про те, що у визначенні когнітивного навантаження фокус обробки має більше значення, аніж структурна складність метафори. Більше того, результати дослідження показали, що візуальна складність (наприклад, злиття vs. злиття-заміщення) сама по собі не пояснює складність інтерпретації; натомість вона взаємодіє з концептуальною структурою та фокусною спрямованістю. Результати дослідження можуть бути практично застосовані в рекламі, екологічній комунікації та візуальному дизайні. Усвідомлення того, як опозиційна спрямованість та тип мережі впливають на обробку метафор, може допомогти дизайнерам створювати візуально привабливі та когнітивно ефективні повідомлення, які покращують залучення та розуміння аудиторії

Ключові слова: метафора; концептуальна інтеграція; візуальна реклама; фокус «порівняння для опозиції»; дзеркальна мережа; трисферна мережа; злиття



The phenomenon of paronymy in contemporary Ukrainian economic terminology as a destabilising factor in professional communication

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Suggested Citation:

Reznik, N., Yumachikova, O., Havryliuk, Yu., Shevchenko, N., & Mazur, K. (2025). The phenomenon of paronymy in contemporary Ukrainian economic terminology as a destabilising factor in professional communication. *International Journal of Philology*, 29(1), 82-100. doi: 10.31548/philolog/1.2025.82.

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Abstract. In the context of the dynamic development of modern economic terminology, marked by the active incorporation of foreign loanwords, there is an increasing need for an in-depth and comprehensive investigation of linguistic phenomena capable of destabilising professional communication. One such linguistic phenomenon is paronymy, which can lead to the use of imprecise and ambiguous terminology in the field of economics. This article aimed to identify, systematise, and analyse paronyms that are most frequently used in contemporary Ukrainian economic terminology. The research involved an analysis of current resources, including electronic databases of Ukrainian legislation and lexicographic sources – both general explanatory dictionaries and specialised economic dictionaries and reference materials. Based on the linguistic analysis conducted, the most common paronymic pairs used in modern Ukrainian economic discourse have been identified and systematised. Particular attention was devoted to the analysis of the semantic nuances and functional characteristics of the identified paronyms, which may contribute to a destabilised understanding of a text's content. The article outlined in detail the significant differences in their lexical meanings, areas of usage, and the specificities of their application in specialised texts. In addition, it explored the various factors that trigger the increased use of paronymic forms in the professional language of economists, thereby contributing to the destabilisation of the terminological system. The results of the study may be effectively applied in the compilation and refinement of various lexicographic works in the field of economics, in the development of modern educational and methodological materials for students of economics, and in targeted efforts to enhance the linguistic competence of professionals in the economic sphere. This, in turn, would support the stabilisation and increased effectiveness of their professional communication

Keywords: communicative competence; language culture; similar-sounding words; phonetic similarity; semantics; terminological system; functioning

Introduction

In modern globalised economic landscape, precision and clarity hold particular significance, as every term carries weight and directly influences decision-making, the drafting of agreements, and the functioning of complex business processes. However, within the lexical arsenal of economists lies a potential source of confusion – paronyms: words with similar phonetic forms that, despite their auditory resemblance, carry different semantic meanings. The incorrect use of such terms may lead to misinterpretation, misunderstandings, and, ultimately, significant economic risks. For this reason, an in-depth analysis of paronyms used in contemporary Ukrainian economic discourse, along with a comprehensive exploration of their potential to destabilise professional

communication, represents a highly relevant and important task for Ukrainian linguists and specialists in economics.

A review of scholarly literature on linguistic confusion – particularly regarding paronyms in economics – revealed considerable academic interest in the impact of this phenomenon on the efficiency of economic processes. As a linguistic phenomenon involving similar-sounding words, paronymy constitutes a critical object of study, as it requires precise differentiation to ensure accurate communication across various contexts, including professional activity. The incorrect use of paronyms can lead to confusion, particularly in registers that demand a high level of precision, such as academic and official-business styles.

This issue has drawn the attention of numerous scholars investigating the nature of paronymy, its functioning, and the challenges it presents in contemporary language. For instance, E. Isaeva (2019) pointed out in her study that in professional contexts – where the effectiveness of communication is crucial – accurate transmission of knowledge is of critical importance. Without appropriate safeguards, this process may involve losses and result in conceptual distortion, highlighting the need to ensure terminological precision, especially in specialised fields. The linguist O. Mykhailenko-Zoto (2019) examined the principles of paronym differentiation in texts of various styles. This study found that the choice between a broad or narrow interpretation of paronymy depends directly on the text's stylistic context. At the same time, the researcher emphasised that a narrow interpretation is most appropriate for academic and official-business styles, where paronyms function as elements of paronymic oppositions. In such contexts, the key principles for avoiding errors are semantic accuracy, conventional appropriateness, and stylistic correctness.

The issue of systematically studying and developing economic terminology in contemporary Ukrainian was also addressed by I. Shelepkova (2021). This study drew attention to the growing relevance of economic terminology, noting its widespread use not only in the professional context but also in everyday communication. The researcher identified the study of economic terminology as a priority task for modern linguistics. The phenomenon of paronymy was examined through the lens of the historical development of economic terminology, as well as the evolution of economic lexicography. According to I. Shelepkova, complexity and multidimensionality are defining features of economic terminology, within which phenomena such as paronymy emerge and function.

At a practical level, the problem of lexical errors in professional communication – particularly in the use of paronyms – is also

studied by other linguists. N. Rymar (2023), for example, classified paronyms as a distinct error-prone group in both spoken and written professional communication. Based on personal observations, such errors stem from confusion between the meanings of phonetically similar words, leading to non-standard usage and a lack of precision in specialised discourse. N. Rymar analysed common lexical mistakes – such as the misuse of paronyms – encountered in professional language, with the aim of characterising these paronyms and providing accurate equivalents.

During the analysis of economists' spoken language, the scholar V. Tovstenko (2021) described the use of paronyms and noted that their phonetic similarity often results in lexical errors and compromises clarity in communication. The researcher provided examples of such confusion in economists' speech, including paronymic pairs such as *liquidator* (ліквідант) – *liquidate* (ліквідат), *license* (ліцензія) – *license* (ліценція), *honorarium* (гонорант) – *honorarium* (гонорат). The author also emphasised that identifying the role of economic terminology in developing professionals' linguistic competence is one of the key challenges in current research.

The issue of developing a culture of professional communication among future economists in higher education institutions – particularly the linguistic training involved – was examined by I. Kharchenko (2020). In this article, the author focused on the methodology of language instruction, which includes studying normative Ukrainian language courses with an emphasis on building professional communication skills and mastering specialised terminology. The researcher pointed out that the language curriculum for future economists involves, among other things, the study of various linguistic units, including paronyms, to ensure their correct usage in professional discourse. This highlights the recognised importance of accurate paronym use in achieving clarity and effectiveness in professional communication among future economic specialists.

From a translation studies perspective, O. Sukhyi & N. Lysa (2025) noted in their study the insufficient exploration of paronyms in economics, particularly in the context of translation between languages. The researchers argued that when translating economic texts, adjectival paronyms may either retain or lose their paronymic relationship, and the degree of similarity between them may shift. In study of interlingual paronymy of verbs in Ukrainian and Polish, O. Stanishchevska (2024) emphasised the limited research into homonyms and paronyms in related languages, particularly from historical-etymological and translation-standpoints. The researcher highlighted the practical importance of understanding these differences to avoid errors in translation and language instruction, which underlines the complexity of interlingual paronymy.

Modern linguistics, in its study of paronymy within economic terminology, consistently identified it as a source of error in professional communication, which has led to its inclusion in educational programmes. The transformation of paronyms during translation is also a subject of ongoing investigation. However, despite growing attention to the issue, the quantitative and qualitative impact of paronymic confusion remains insufficiently addressed.

This study aimed to examine paronymy in contemporary Ukrainian economic terminology and to identify its potential role as a factor destabilising the accuracy of professional communication. To achieve this aim, the following objectives were set: to identify and analyse the semantic and functional features of paronyms; to investigate the causes of their misuse; to assess the impact of incorrect usage on economic communication; and to develop practical recommendations for enhancing linguistic competence among economists and preventing confusion.

Materials and Methods

To conduct a comprehensive study of the phenomenon of paronymy in contemporary

Ukrainian economic terminology – as a significant factor potentially destabilising the accuracy and clarity of professional communication – a carefully selected, integrated approach was employed, combining complementary qualitative and quantitative methods of analysis. The primary method used in this research was content analysis of Ukrainian economic texts. Its key function lied in the direct identification and qualitative systematisation of specific paronymic pairs and series that are actively used in professional economic discourse. Through this method, the authors were able to examine authentic instances of economic terminology in use, identify potential sources of confusion caused by paronyms, and understand the contexts in which their incorrect usage may have the most detrimental effects on the stability of professional communication. This method is fundamental in establishing the empirical foundation of the study, as it enables the initial identification of the object of analysis – paronyms in economic language.

To objectively assess the prevalence of the identified phenomenon and determine its potential scale as a destabilising factor, the use of quantitative analysis was essential. This method involved the statistical processing of empirical material collected during the content analysis. Its value lied in providing numerical data on the frequency of use of each identified paronymic pair or set across different types of economic texts. The resulting statistical indicators made it possible to identify the most frequently used paronyms, which consequently pose the greatest risk to professional communication due to increased potential for error. Quantitative analysis enabled researchers to measure the intensity of the phenomenon and pinpoint the most problematic areas of economic terminology in terms of paronymic confusion. To gain a deeper understanding of the issue and identify the mechanisms through which paronymy destabilises professional communication, the study also employed a

comparative-contrastive method. This approach was particularly significant in its careful comparison of the semantic characteristics of paronyms. A detailed differentiation of the meanings of similar-sounding words helped clarify the nature of potential errors and assess the degree of semantic proximity that may lead to confusion. Moreover, comparative-contrastive analysis aided in predicting possible communication breakdowns and identifying contexts in which failure to distinguish between paronyms may have especially critical consequences for the accuracy of economic information and the stability of professional interactions. This method was key to understanding the internal mechanisms of destabilisation associated with paronymy.

To ensure broad and representative coverage of economic discourse, the following resources were used: Electronic legislative databases of Ukraine: Verkhovna Rada of Ukraine (n.d.), Liga Zakon (n.d.), Normative Acts of Ukraine (NAU) (n.d.). Electronic Ukrainian language dictionaries: Economic Dictionary Online (n.d.), S.M. Ribachok *et al.* (2023), Y.M. Dvorak (2018), S. Honcharov & H.B. Kushnir (2009), D.H. Hrynchyshyn & O.A. Serbenska (1986). The study was carried out in the following stages:

1. Preparatory stage. Definition of the aim, objectives, subject, and object of the research – the phenomenon of paronymy in contemporary Ukrainian economic terminology as a factor destabilising professional communication. Review of existing scholarly literature in linguistics, economic terminology, and interlingual communication, using academic electronic libraries (including the electronic catalogue of the V.I. Vernadskyi National Library of Ukraine, university repositories, Google Scholar, ResearchGate, and Academia.edu). Compilation of a corpus of economic texts through the search and selection of legislative acts of Ukraine (from the aforementioned databases) and economics-related materials (academic articles, professional publications) in digital format.

2. Content analysis stage. Systematic examination of the selected corpus of economic texts to identify potential paronymic pairs and sets within economic terminology. Recording of usage contexts for the identified paronyms for subsequent semantic analysis. Development of a preliminary classification of the identified paronyms based on their application in the field of economics.

3. Quantitative analysis stage. Statistical processing of the identified paronymic units to determine their frequency of use across different types of economic texts. Identification of the most frequently occurring paronyms, which pose a potentially higher risk to the accuracy of professional communication.

4. Comparative-contrastive analysis stage. Detailed semantic comparison of the identified paronyms using electronic Ukrainian language dictionaries (Economic Dictionary Online (n.d.), Y.M. Dvorak (2018), S.M. Ribachok *et al.* (2023), Economic dictionary) to identify differences in meaning. Contextual analysis of paronym usage to detect situations in which confusion may lead to misinterpretation and destabilisation of professional communication. Assessment of potential communicative risks associated with failure to distinguish between paronyms in the professional domain.

5. Generalisation stage. Interpretation of the results of both the quantitative and comparative-contrastive analyses. Formulation of conclusions regarding the role of paronymy as a factor that destabilises accuracy and clarity in professional communication within contemporary Ukrainian economic terminology. Development of practical recommendations to enhance the linguistic competence of economic professionals and to prevent confusion caused by paronymy.

Results

Terminology, as the set of terms specific to a particular field of science, technology, or the arts, constitutes one of the most dynamic and

sensitive subsystems of a language's lexical structure. Economic terminology encapsulates the complex processes and phenomena of economic life, financial relations, management, and international trade. The principal requirements for terms include adherence to the norms of standard language, unambiguity, precision, systematic organisation, and stylistic neutrality. Observance of these criteria is essential for effective professional communication. However, in the actual functioning of terminological systems – particularly those undergoing active development, such as Ukrainian economic terminology – phenomena arise that deviate from ideal standards. One such phenomenon is paronymy.

According to the dictionary by D.H. Hrynchyshyn & O.A. Serbenska (1986), “paronyms” (from the Greek *para* – near, beside and *onyma* – name) are words that are similar in sound and morphemic structure but differ in lexical meaning. They often belong to the same part of speech and share a common root, which causes their external similarity and increases the risk of incorrect usage. In his research, O. Ponomariv (2011) emphasised that paronyms require special attention, as confusing them leads to serious lexical errors, distorting or obscuring the intended meaning. In terminology, paronymy acquires particular relevance. While in general literary language, the misuse of paronyms may result in misunderstanding or even humorous effects, in scientific and professional discourse – where precision is paramount – the consequences may be considerably more serious. The incorrect use of a paronym can result in:

- distortion of meaning in scientific or analytical texts;
- misinterpretation of financial reports, contracts, or regulatory documents;
- errors in calculations and forecasts;
- the adoption of flawed managerial decisions;
- legal disputes.

The sources of paronymy in terminological systems may include both internal linguistic mechanisms (word formation, particularly through suffixation) and external influences (borrowing, calquing). Both factors significantly affect Ukrainian economic terminology. The active generation of new terms from Ukrainian roots using particular term-forming models – for example, suffixes such as *-н(ий)*, *-ов(ий)*, *-ськ(ий)*, *-ичн(ий)* / *-ічн(ий)* – frequently results in the emergence of formally similar units, as noted by A.S. Dyakov *et al.* (2000). Simultaneously, the vigorous process of borrowing from English, along with the influence of Russian (particularly via calques or words that appear similar but differ in meaning between Ukrainian and Russian), also contributes to paronymic errors. Research into paronymy in economic terminology thus necessitates not only the identification of paronymic pairs, but also a thorough analysis of their semantic structures, valency properties (collocational compatibility), stylistic characteristics, and pragmatic function within specific communicative contexts in the economic domain.

The analysis of modern resources – including electronic databases of Ukrainian legislation such as Verkhovna Rada of Ukraine (n.d.), Liga Zakon (n.d.), and Normative Acts of Ukraine (NAU) (n.d.), as well as electronic economic dictionaries such as Economic Dictionary Online (n.d.), S.M. Ribachok *et al.* (2023), Y.M. Dvorak (2018) – revealed a significant number of paronymic pairs that are either actively used or have the potential to be misused in economic discourse. The identified pairs can be categorised according to various criteria. From the perspective of word formation structure, common pairs are those that differ in:

Suffixes: *економіс* (економічний) (relating to economics as a discipline, national economy, or industry) – *економіскал* (економний) (thrifty, requiring minimal expenditure); *credit* (кредитний) (pertaining to credit or loans) – *creditor* (кредиторський) (relating to a creditor, i.e.,

an individual or institution that provide credit); *financial* (фінансовий) (relating to finance or monetary circulation) – *financier* (фінансистський) (pertaining to a financier, a specialist in finance); *investment* (інвестиційний) (concerning investments or capital expenditure) – *investor* (інвесторський) (pertaining to an investor, i.e., an individual or institution that makes investments); *loss-making* (збитковий) (causing financial losses) – *loss-prone* (збитківний) (likely to cause losses; infrequent in usage, mainly colloquial, and may be mistakenly used in place of “loss-making”); *profitable* (прибутковий) (generating profit) – *profit-driven* (прибутківний) (motivated by profit; not a technical economic term but may be confused due to similarity); *cash* (готівковий) (conducted in cash) – *cash* (готівка) (money in the form of banknotes and coins; although different parts of speech, their shared root may cause confusion in usage); *monetary* (грошовий) (pertaining to money) – *wealthy* (грошовитий) (possessing substantial wealth; not a formal term); *tax-related* (податковий) (relating to taxes) – *pliable* (податливий) (easily influenced; erroneous substitution due to phonetic resemblance).

Prefixes: *expenses* (витрати) (money or material assets spent on something) – *costs* (затрати) (expenses specifically related to production; often treated as synonyms, but “costs” are more narrowly defined); *payment* (оплата) (the act of paying for something) – *disbursement* (виплата) (payment of wages, fees, or reimbursements); *provide* (надати) (to grant access or ownership) – *sell* (продати) (to transfer ownership in exchange for money).

Root similarities (often due to borrowing or historical variation): *company* (компанія) (a commercial or industrial organisation) – *campaign* (кампанія) (a coordinated series of actions, e.g. *marketing campaign* (маркетингова кампанія), *election campaign* (виборча кампанія)); *subscriber* (абонент) (a person using a subscription service) – *subscription* (абонемент) (the right to use a service over a set

period); *effect* (ефект) (the result or consequence of actions; also impression) – *affection* (афект) (a state of intense emotional arousal; not an economic term but may be confused due to foreign origin and similar sound); *addressee* (адресат) (the recipient) – *sender* (адресант) (the one who sends); *diplomat* (дипломат) (an official in diplomacy) – *diploma holder* (дипломант) (a person awarded a diploma, usually for an achievement).

Borrowed terms versus Ukrainian equivalents/pseudo-equivalents: *leasing* (лізинг) (long-term rental of machinery or equipment) – *rental* (оренда) (general property rental; leasing is a specific subtype); *management* (менеджмент) (organisational and production management, a structured set of principles) – *administration* (управління) (the broader activity of organising and coordinating processes). This list is not exhaustive but illustrates the diversity of paronymic pairs that pose potential challenges in economic communication. It is important to note that some of these pairs are classic paronyms (formally similar but semantically distinct), while others represent terms of different degrees of generality (e.g. *leasing* (лізинг) vs. *rental* (оренда)) or belong to different stylistic registers or parts of speech, yet may be confused due to a shared root or phonetic resemblance.

The analysis of the collected material, based on the aforementioned legislative databases, showed that among the identified paronymic pairs, the most frequently occurring ones – those most likely to be used incorrectly in economic communication – are listed and examined below in descending order of frequency. To gain a deeper understanding of the issue, it is necessary to examine these pairs in more detail, with particular attention to their semantic and functional distinctions.

Company (компанія) – *campaign* (кампанія). This pair of paronyms, derived from different linguistic roots, are often confused due to their similar pronunciation and orthography. *Company* (компанія) refers to an enterprise,

firm, or organisation engaged in production, trade, finance, or other commercial activities. It can also denote a group of people spending time together. For example: “insurance company (страхова компанія)”, “oil company (нафтова компанія)”, “to establish a company (заснувати компанію)”, “company stocks (акції компанії)”. *Campaign* (кампанія), by contrast, denotes a series of organised activities pursued to achieve a specific goal within a defined timeframe. For instance: “advertising campaign (рекламна кампанія)”, “marketing campaign (маркетингова кампанія)”, “election campaign (виборча кампанія)”, “sowing campaign (посівна кампанія)”, “information campaign (інформаційна кампанія)”. A typical error occurs when *company* (компанія) is incorrectly used in the sense of *campaign*, as in “advertising company (рекламна компанія)” instead of “advertising campaign (рекламна кампанія)”, or vice versa. This indicates a lack of awareness of the distinct semantic roles of the two terms.

Address (адрес) – *address* (адреса). This paronymic pair distinguishes between a technical and a general term related to location or identification. *Address* (адрес) (masculine noun) is primarily used in technical contexts in modern Ukrainian, for example: “IP address (ІР-адрес)”, “email address (електронний адрес)”. Historically, it was also used to mean a formal written greeting or congratulatory message, such as (“welcome address (вітальний адрес)”). *Address* (адреса) (feminine noun) refers to a person’s place of residence or the location of an institution; it also denotes the information written on a postal item indicating to whom and where it should be sent. Additionally, it may refer to a sequence of characters used to identify a resource in a computer network (e.g. “web address (веб-адреса)”, “mailing address (поштова адреса)”). Examples include: “legal address (юридична адреса)”, “mailing address (поштова адреса)”, “home address (домашня адреса)”, “web address (веб-адреса)”. The use of *address* (адрес) instead of *address* (адреса) to

mean “location” or “postal label” is non-standard in contemporary Ukrainian, except in certain technical contexts (such as “IP address (ІР-адрес)”). This distinction is important in business correspondence and electronic communication.

Spectacular (ефектний) – *effective* (ефективний). This pair of paronyms distinguishes between external impact and actual effectiveness. *Spectacular* (ефектний) is an adjective used to describe something visually impressive, striking, or showy. For example: “spectacular appearance (ефектний вигляд)”, “spectacular presentation (ефектна презентація)”, “spectacular design (ефектний дизайн)”. *Effective* (ефективний) is an adjective that refers to something that produces the desired result, is efficient or achieves an aim with minimal cost or effort. For example: “effective solution (ефективне рішення)”, “effective use of resources (ефективне використання ресурсів)”, “effective management (ефективне управління)”, “effective method (ефективний метод)”. Although both words originate from the Latin *effectus*, their meanings differ significantly. *Spectacular* (ефектний) refers to visual or emotional impact, whereas *effective* (ефективний) relates to results and efficiency. Confusing a *spectacular* (ефектного) decision (one that looks impressive) with an *effective* (ефективним) decision (one that delivers results) is a serious error in economic and managerial terminology.

Economic (економічний) – *economical* (економний). This is one of the most classic and widespread paronymic pairs. *Economic* is an adjective that denotes a connection with the discipline of economics in its various dimensions:

- as a science: “economic theory (економічна теорія)”, “economic analysis (економічний аналіз)”, “economic education (економічна освіта)”;
- as the economy of a country, region, or sector: “economic development (економічний розвиток)”, “economic crisis (економічна криза)”, “economic policy (економічна політика)”, “economic system (економічна система)”;

► as a set of socio-economic relations: “*economic formation (економічна формація)*”, “*economic laws (економічні закони)*”.

Economical (економний) means that which allows for saving, and preserving resources. Synonyms: *frugal (ощадливий)*, *sparing (заощадливий)*, *thrifty (бережливий)*. It is used in relation to individuals (e.g. “*an economical householder (економний господар)*”) as well as to processes, technologies, and systems (e.g. “*economical use of resources (економне використання ресурсів)*”, “*economical operating mode (економний режим роботи)*”, “*economical technology (економна технологія)*”). Errors arise when *economical (економний)* is incorrectly substituted with *economic (економічний)* in the sense of “*frugal (ощадливий)*”, such as in “*economic use of fuel (економічне використання палива)*” (should be: *economical (економне)* use). While the phrase “*economic person (економічна людина)*” may theoretically refer to “*someone engaged in the field of economics (людина, яка займається економікою)*”, it is more frequently misused in contexts where frugality is appropriate – leading to ambiguity regarding whether thriftiness or academic affiliation is implied.

Credit (кредитний) – *creditor-related (кредиторський)*. This pair pertains to financial terminology, distinguishing between the concept of credit itself and that relating to the subject of the creditor, i.e. the party extending credit. *Credit* is used as an adjective in the context of loans or credit arrangements, for example: “*credit agreement (кредитний договір)*”, “*credit line (кредитна лінія)*”, “*credit risk (кредитний ризик)*”, “*credit history (кредитна історія)*”, “*credit card (кредитна картка)*”, “*credit resources (кредитні ресурси)*”, “*credit union (кредитна спілка)*”. *Creditor-related (кредиторський)* refers to the entity that has issued the loan. For example: “*creditor debt (кредиторська заборгованість)*”, meaning the debt owed by a company to its suppliers, contractors, and other entities; “*creditor claims (кредиторські вимоги)*”.

Incorrect use of these paronyms constitutes a serious linguistic error that can lead to substantial misunderstandings in financial reporting and legal documentation. For example, the terminological phrase “*creditor agreement (кредиторський договір)*” instead of “*credit agreement (кредитний договір)*” is incorrect. Similarly, the phrase “*credit debt (кредитна заборгованість)*” may be broadly understood as debt related to credit, but the terminologically accurate expression for debt owed to a party is “*creditor debt (кредиторська заборгованість)*”. Distinguishing these terms is essential for ensuring clarity in the expression of financial obligations.

Investment (інвестиційний) – *investor (інвесторський)*. Like the previous pair, these paronyms differentiate between the object (*investment (інвестиція)*) and the subject (*investor (інвестор)*). *Investment (інвестиційний)*, as an adjective, refers to matters pertaining to capital expenditure aimed at generating profit, for example: “*investment project (інвестиційний проєкт)*”, “*investment climate (інвестиційний клімат)*”, “*investment fund (інвестиційний фонд)*”, “*investment activity (інвестиційна діяльність)*”, “*investment attractiveness (інвестиційна привабливість)*”, “*investment portfolio (інвестиційний портфель)*”. *Investor (інвесторський)* is an adjective, denotes attributes linked to the investor – the individual or entity making the investments). Examples include: “*investor rights (інвесторські права)*”, “*investor risks (інвесторські ризики)*” (risks borne by the investor), “*investor capital (інвесторський капітал)*” (capital owned by investors).

Incorrect terminology, such as “*investor project (інвесторський проєкт)*” in place of “*investment project (інвестиційний проєкт)*”, distorts meaning. The project concerns investment activity, not ownership by the investor, though the latter may initiate or finance it. Clear terminological differentiation is therefore critical for the accurate description of investment processes and relationships.

Valuable (цінний) – *pricey* (ціновий). This paronymic pair is important for distinguishing between the concepts of value or significance and those related to pricing. *Valuable* (цінний) is an adjective that describes something of great worth, importance, or usefulness. For example: “*valuable experience* (цінний досвід)”, “*valuable equipment* (цінне обладнання)”, “*securities* (цінні папери)” (акції, облігації тощо), “*valuable resource* (цінний ресурс)”. *Pricey* (ціновий) is an adjective referring to price or pricing indicators. For example: “*pricing policy* (цінова політика)”, “*price shock* (ціновий шок)”, “*price index* (ціновий індекс)”, “*price regulation* (цінове регулювання)”. Confusion often arises due to the shared root “цін-”. It is essential to distinguish between *valuable* (цінний) (denoting worth, importance, or utility) and *pricey* (ціновий) (pertaining to cost or pricing mechanisms). Phrases such as “*pricey experience* (ціновий досвід)” or “*valuable policy* (цінна політика)” are incorrect. This distinction is especially critical in financial terminology – e.g. “*securities* (цінні папери)” versus “*price index* (ціновий індекс)”.

Productive (продуктивний) – *food, grocery* (продуктовий). This pair of paronyms distinguishes between concepts related to work efficiency and those referring to specific goods, especially food products. *Productive* (продуктивний) is an adjective describing something that yields high output, is fruitful, or is capable of generating value. Examples include: “*productive worker* (продуктивний працівник)”, “*labor productivity* (продуктивність праці)”, “*productive period* (продуктивний період)”, “*productive use* (продуктивне використання)”. *Food, grocery* (продуктовий) is an adjective referring specifically to food products or goods, particularly in the context of production or retail. Examples include: “*grocery store* (продуктовий магазин)”, “*grocery basket* (продуктовий кошик)”, “*grocery stocks* (продуктові запаси)”, “*grocery line* (продуктова лінійка)”. *Productive* (продуктивний) relates to efficiency and output in a broad sense, whereas *food, grocery*

(продуктовий) refers specifically to food-stuffs or grocery items. Using “*grocery worker* (продуктовий працівник)” instead of “*productive worker* (продуктивний працівник)”, or “*productive line* (продуктивна лінійка)” instead of “*grocery line* (продуктова лінійка)”, constitutes a misuse of terms. In economic discourse, “*productivity* (продуктивність)” is a key indicator of efficiency, while “*food, grocery* (продуктовий)” is used to describe a type of product.

It may be assumed that the first four pairs represent the most frequently encountered paronyms in contemporary Ukrainian economic terminology in terms of potential confusion. The analysis of these and other pairs indicates that the key semantic distinctions between economic paronyms lie in differentiating: concepts that are formally similar but semantically distinct: *company* (компанія) – *campaign* (кампанія); areas of application or shades of meaning: *address* (адрес) – *address* (адреса), *spectacular* (ефектний) – *effective* (ефективний), *valuable* (цінний) – *pricey* (ціновий), *productive* (продуктивний) – *food, grocery* (продуктовий); a general concept and its specific manifestation or characteristic: *economic* (економічний) – *economical* (економний); attributes related to the object vs those related to the subject: *credit* (кредитний) – *creditor-related* (кредиторський), *investment* (інвестиційний) – *investor* (інвесторський); a process or phenomenon and its defining attribute: *economic* (економіка) – *economistic* (економічний).

Functionally, these paronyms are distinct in their respective domains and collocational behaviour. Deviating from these norms results in communication breakdowns. As for the causes underlying the emergence and spread of paronymic errors in economic discourse, it should be noted that these mistakes arise from a combination of linguistic and extralinguistic factors. Linguistic factors include: formal similarity, where phonetic and graphic resemblance, especially between words sharing a root and differing only by a suffix or prefix (e.g. *credit*

(кредитний) – creditor (кредиторський), expenses (витрати) – costs (затрати), leads to confusion; word-formation activity, whereby intensive generation of new terms using productive morphological patterns – particularly adjective suffixes such as -н(ий), -ов(ий), -ськ(ий), -ичн(ий) / ічн(ий) – produces clusters of formally similar terms with subtle semantic differences; semantic proximity, where some paronyms refer to closely related concepts, as in investment (інвестиційний) – investor (інвесторський), financial (фінансовий) – financier (фінансистський), increasing the risk of misuse; interlingual interference, notably from Russian, which has historically exerted significant influence on Ukrainian economic terminology. Some Ukrainian paronyms have counterparts in Russian, where their distinction may be less well defined or have a different level of specificity, for example, Rus. *Экономический* (економічний) / *экономичный* (економічний). There is also the possibility of calquing Russian structures or inaccurately transferring meanings from Russian words to their Ukrainian equivalents. Additionally, the influence of English – especially the extensive borrowing of English terms such as *management* (менеджмент), *marketing* (маркетинг), *leasing* (лізинг) – and their adaptation into Ukrainian can also give rise to paronymy, particularly in the formation of derived terms, such as *marketing* (маркетинг). Moreover, the similarity between certain English and Ukrainian words (often due to shared Latin roots) may provoke errors (e.g. *company* (компанія) / *campaign* (кампанія)). Another contributing factor is the insufficient lexicographical development of professional resources; the lack of clear definitions, usage examples, and specific markers distinguishing paronyms in some specialised dictionaries complicates accurate acquisition, as noted by L. Lyshychenko (2009).

Extralinguistic factors include: the rapid development of the economic sector, which involves the emergence of new concepts, tools, and technologies. This requires immediate

terminological support, which is not always provided in a systematic or standardised way. The result is terminological variability and inconsistency, leading to frequent errors; an insufficient level of linguistic training among professionals. Training programmes for economists, financiers, and managers often fail to place adequate emphasis on professional language development and terminological competence; haste and inattentiveness. In a fast-paced business environment, specialists often draft documents or speak under time constraints, increasing the likelihood of incorrect word choice; the influence of mass media and the internet. The misuse of economic terminology in media and online platforms can contribute to the entrenchment of erroneous patterns in public and professional discourse; Translation issues, where poor-quality translations of foreign economic literature, documentation, or software also play a role in spreading terminological errors, including paronymic confusion, as observed by V. Koval & L.I. Hladka (2012).

Understanding the aforementioned factors is essential for developing effective strategies to address the problem of paronymy in economic communication. It is equally important to recognise that the incorrect use of paronyms in economic terminology is not merely a formal linguistic error; it has practical negative consequences for professional activity, functioning as a destabilising factor in both communication and decision-making. In particular, it reduces the accuracy and clarity of communication. For example, the incorrect use of terms such as *economis* (економічний) and *economical* (економіний), *credit* (кредитний) and *creditor* (кредиторський), *company* (компанія) and *campaign* (кампанія) introduces ambiguity and semantic imprecision. The listener or reader is forced either to exert additional effort to interpret the message or may misunderstand the information entirely.

Another negative consequence of the incorrect use of paronyms in economic texts is

the potential for misunderstanding and the creation of communication barriers, as imprecision can lead to complete breakdowns in communication between professionals – especially when they represent different departments, organisations, or even countries (in the case of international communication). This hinders collaboration and complicates the coordination of actions. A particularly serious issue arises with errors in data analysis and interpretation, as misunderstanding terms in financial reports, analytical reviews, and statistical data can lead to misleading conclusions about a company's financial position, operational efficiency, market trends, and more. For example, an incorrect or imprecise understanding of the concept of accounts payable could significantly distort the actual picture of financial liabilities.

Another serious consequence of paronym misuse in economic texts is the risk of ineffective or erroneous managerial decision-making. It is important to note that decisions in economics and management are primarily based on information analysis. If this information is distorted due to incorrect terminology (particularly paronyms), the resulting decisions may prove to be suboptimal or even damaging. For instance, an inaccurate assessment of a project's *investment* (*інвестиційної*) attractiveness due to a misunderstanding of key terms could result in missed profitable opportunities or, conversely, investment in an unviable venture.

Within this context, it is also important to highlight the associated legal and financial risks. In official documents – such as contracts, agreements, statutes, and regulations – terminological precision is critically important. The misuse of paronyms in economic texts (e.g. *recipient* (*адресат*) / *sender* (*адресант*), *payment* (*оплата*) / *disbursement* (*виплата*)) can lead to legal disputes, financial claims, and material losses. Moreover, ambiguity in the wording of a *loan agreement* caused by terminological inaccuracy may have serious consequences for both parties. Another notable consequence of

incorrect paronym usage is its detrimental effect on professional credibility. The systematic misuse of specialised terminology reflects a low level of professional culture and linguistic competence, which may negatively affect a specialist's reputation and limit career progression.

Thus, the issue of paronymy in economic terminology extends beyond purely linguistic interest and constitutes a practical challenge that directly influences the quality and effectiveness of economic activity. In her study, L. Symonenko (1991) emphasised that the precision and unambiguity of terms are essential for ensuring effective professional communication and mutual understanding among specialists. Paronymy undermines this clarity and introduces risk at every stage of professional interaction.

Accordingly, addressing the issue of incorrect paronym usage in the economic sphere requires a comprehensive approach, aimed at enhancing the linguistic culture of all participants in professional communication and refining the terminology system itself. Based on the analysis conducted, the following recommendations have been formulated for economic professionals. Based on the findings of the study, several recommendations have been formulated to enhance the linguistic competence of economic professionals: develop individual language awareness and competence through regular reading of specialist literature, use of dictionaries, and consistent self-monitoring. Every professional should recognise the importance of accurate terminology and strive to improve their usage. Select vocabulary for professional texts carefully and attentively, avoiding haste in the preparation of key documents or presentations. Special attention should be paid to terminology in cases where paronymic confusion is possible. Use reference resources when in doubt about the meaning or usage of a term. It is essential to consult authoritative dictionaries and reference materials to ensure precision. Proofread and edit important documents – such as reports, contracts, and

analytical papers – to identify and correct potential linguistic errors, including paronymic ones. This practice reflects a high level of language competence. Establish corporate standards for terminology use where possible. Large companies and institutions may benefit from developing internal glossaries and style guides to promote consistency and accuracy in terminology, thus supporting the ongoing development of staff language skills.

It is important to note that the implementation of the above recommendations requires joint efforts from linguists, lecturers of economic disciplines, and practising professionals. Only a comprehensive approach can minimise the negative impact of paronymy on professional communication in the economic sphere. Such an approach will not only contribute to enhancing the linguistic culture of economic professionals but also have a direct positive effect on the accuracy of economic information and the effectiveness of managerial decisions at all levels. Raising awareness of the importance of precise terminology and actively addressing linguistic inaccuracies is a crucial step towards ensuring the stability and transparency of economic processes in contemporary society.

Discussion

The findings of this study on the phenomenon of paronymy in Ukrainian economic texts confirm both the complexity of the phenomenon and its potential impact on the accuracy of professional communication. The identified paronymic pairs revealed a significant degree of semantic overlap or co-occurrence in similar contexts, which may lead to misunderstandings. For a more in-depth analysis of the observed patterns, it would be appropriate to consider methodological approaches proposed in contemporary linguistics, particularly those based on distributional semantics.

In the context of quantitative properties and aspectual interpretation, M. Andreou & R. Lieber (2020) demonstrated in their research

that these features are not strictly determined by the form of nominalisation, but rather depend significantly on factors such as temporal and quantitative modifiers. This research is particularly relevant as it highlights the decisive role of context in semantic differentiation and the potential confusion caused by paronyms in Ukrainian economic terminology. Notably, as stated in the study of G. Boleda (2020), distributional semantics offers multidimensional, gradable, and empirically induced representations of words that successfully capture different meanings in language. This supports the potential of such an approach for the detailed analysis of semantic nuances between paronyms, which is highly significant for this area of study.

Turning to diachronic analysis, the usage patterns of linguistic units forming paronymic relationships are illustrated in the study by E. Cartier & R. Huyghe (2021). By examining French prefixes that form the superlative degree, the researchers identified the persistence of affixal redundancy and cases of synonymy among competing lexical forms. Although their study focuses on affix competition, similar principles can be applied to understanding the challenges of distinguishing and accurately using paronyms, which often coexist with a high degree of semantic overlap. This underscores the need for a comprehensive approach to the study of paronymy – one that combines both qualitative and quantitative methods and takes into account the dynamic interaction between word form, core meaning, and a wide range of contextual factors.

To address challenges such as distinguishing between formally and semantically similar words, methods of distributional semantics are proving highly effective. The study by K. Denistia *et al.* (2022) demonstrated that vector space models can be used to quantitatively assess subtle semantic differences between closely related linguistic units. Measuring semantic similarity – for instance, through cosine similarity – reveals a lower degree of closeness between

word pairs that differ in formal composition, thus indicating semantic differentiation. These quantitative indicators reflect the existence of semantic specialisation even among superficially similar words, a finding further supported by the high accuracy of automatic classification. This highlights the considerable potential of distributional semantics for in-depth analysis of semantic nuances between paronyms in any type of text, including economic discourse.

In addition, vector representation models of words are effectively used to quantify semantic similarity and differentiation among linguistic units. A valuable contribution in this area was the study of M. Guzmán Naranjo & O. Bonami (2023), whose approach to studying “rivalry in word formation” can be applied analogously to the analysis of the phenomenon of paronymy. In this context, words with similar forms may compete for use in particular situations, sometimes leading to confusion. This methodology would not only allow the identification of paronyms but also help determine the degree of their semantic overlap – an aspect that is critically important for understanding potential communicative risks.

A further analysis of the phenomenon of affix rivalry is presented in detail by R. Huyghe & R. Varvara (2023). This linguistic phenomenon is characterised by its gradient nature and the multiplicity of factors influencing the differentiation of competing forms. The researchers note that distinctions between such forms often emerge as tendencies rather than clear-cut boundaries, thus requiring quantitative assessment to accurately determine degrees of rivalry. The use of similar theoretical and methodological approaches is particularly valuable for analysing Ukrainian paronyms, as it enables the quantitative measurement of their subtle semantic differences.

The concept of affix rivalry developed by A. Nagano (2023) is especially relevant in the context of studying paronymy in Ukrainian economic texts. Her research demonstrates

that competing forms may occupy their own ecological niches, with their distinctions more often appearing as trends rather than precise demarcations. This approach, which emphasises purely semantic differentiation, can be employed to quantitatively assess fine semantic nuances between paronyms in Ukrainian terminology. It helps determine the degree of their semantic overlap and the potential communicative risks – both of which are critically important for understanding factors that may destabilise professional communication.

In terms of practical application, the methodological approach proposed by B. Schirakowski (2020), which focused on the analysis of semantic distinctions and the functional load of word-formation models, may be adapted for the study of the phenomenon of paronymy in Ukrainian economic terminology. An examination of argument structures and the interpretative preferences of paronymic terms can help identify the causes of destabilisation in professional communication, while the use of such linguistic tools may contribute to resolving terminological confusion within the economic domain.

Also relevant is the study by M. Wauquier *et al.* (2020), which confirmed the existence of semantic distinctions between nominalisations based on distributional analysis, partially determined by their degree of technicality. These findings are particularly important as they demonstrate how even subtle semantic differences, when measured using distributional methods, may reflect varying levels of specialisation or technicality – an essential consideration in distinguishing paronyms in highly specialised economic texts.

It is also worth noting that the concept of semantic transparency holds considerable relevance in the analysis of paronymy. Transparency – understood as the extent to which a word’s meaning can be inferred from its constituent parts – is frequently a graduated notion rather than a binary one. R. Varvara *et al.* (2021)

demonstrated how distributional semantic methods – characterising word meanings based on their usage contexts – can empirically measure semantic transparency. Their study highlighted that metrics such as cosine similarity can reveal overall semantic similarity, while distributional inclusion can uncover more nuanced relationships, such as when one word is used within a subset of the contexts of another, indicating semantic specialisation. Moreover, their findings emphasise the interaction between word frequency and semantic transparency, showing how relative frequency may lead to “lexical splitting” or “semantic drift”, reducing a word’s transparency concerning its original meaning. This comprehensive approach to semantic transparency, and its measurement using corpus-based distributional methods, provides a valuable foundation for understanding subtle semantic distinctions and potential confusion among paronyms.

Thus, a comprehensive analysis of contemporary linguistic research – particularly in the fields of distributional semantics, affix rivalry, and semantic transparency – confirms the considerable potential of quantitative methods for gaining a deeper understanding of the fine semantic distinctions between paronyms in Ukrainian economic terminology and for addressing issues related to their incorrect usage.

Conclusions

As a result of the conducted research, it has been established that the phenomenon of paronymy is a significant problem in modern Ukrainian economic terminology. Furthermore, several common paronymic pairs have been identified and analysed (e.g. *economic* (економічний) / *economical* (економний), *credit* (кредитний) / *creditor* (кредиторський), *investment* (інвестиційний) / *investor* (інвесторський), *financial* (фінансовий) / *financier* (фінансистський), *company* (компанія) / *campaign* (кампанія), etc.), which are often misused in professional communication. The classification of these pairs

revealed that they are predominantly formed through processes of suffixation or prefixation, or as a result of borrowing. The analysis of the semantic and functional characteristics of the identified paronyms confirmed the existence of clear differences in their meanings and contexts of usage. The primary distinctions concern the differentiation between concepts related to the object and subject of an action, general concepts and their specific attributes, as well as the distinction between terms denoting different, albeit formally similar, economic phenomena. The emergence and spread of errors in the use of paronyms are facilitated by a combination of linguistic factors (formal and semantic similarity, productive word-formation processes, interlingual interference) and extralinguistic factors (the dynamic development of the industry, insufficient linguistic training of specialists, media influence, translation challenges). The incorrect use of paronyms significantly reduces the effectiveness of professional communication in the economic field, as it leads to semantic inaccuracies, misunderstandings, and errors in data interpretation, and may result in the adoption of inadequate managerial decisions, with potentially serious legal and financial consequences. Such errors act as a destabilising factor in professional interaction. Overcoming the problem of paronymy requires targeted efforts from professionals in the field of economics, namely: enhancing individual linguistic competence, paying close attention to terminological precision, and making active use of reference materials.

Thus, paronymy in contemporary Ukrainian economic texts represents a genuine communicative barrier that must be acknowledged and addressed. Improving the linguistic culture of economists, refining terminological practices, and advancing lexicographical work is essential for ensuring accuracy, clarity, and effectiveness in professional communication within Ukraine’s economic sector. Future research directions include the quantitative analysis

of paronymic error frequency across different genres of economic writing, a deeper investigation of the role of interlingual contact in the emergence of paronymy, and the development of digital tools for the automatic detection and correction of paronymic errors in contemporary Ukrainian economic texts.

Acknowledgements

The authors express their sincere gratitude to colleagues from the National University of Life and Environmental Sciences of Ukraine, Vinnytsia National Agrarian University, and Adam

Mickiewicz University, Poznań, for their valuable discussions and for proofreading the text during the preparation of this article. Any opinions expressed, as well as any remaining errors, are solely the responsibility of the authors.

Funding

This research was conducted without external funding.

Conflict of Interest

The authors declare no conflict of interest relevant to this article.

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Феномен паронімії в сучасній українській економічній термінології як фактор дестабілізації професійного спілкування

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Анотація. В умовах динамічного розвитку сучасної економічної термінології, що характеризується активним проникненням іншомовних запозичень, зростає актуальність глибокого й всебічного дослідження мовних явищ, здатних дестабілізувати процеси професійної комунікації. Одним із таких лінгвістичних феноменів є явище паронімії, що може стати причиною використання неточної й неоднозначної фахової термінології у сфері економіки. Метою статті була спроба виявлення, систематизації та лінгвістичного аналізу паронімів, що найчастіше використовуються у сучасній українській економічній термінології. У межах проведеного дослідження здійснено аналіз сучасних ресурсів, що охоплюють електронні бази даних законодавства України, і лексикографічних джерел, зокрема загальномовних тлумачних словників, а також спеціалізованих економічних словників і довідників. На основі проведеного лінгвістичного аналізу було ідентифіковано й систематизовано найбільш поширені паронімічні пари, що активно використовуються в сучасному українському економічному дискурсі. Особливу увагу приділено аналізу семантичних нюансів і функціональних особливостей виявлених паронімів, що можуть призводити до дестабілізації розуміння змісту тексту. Детально окреслено суттєві

відмінності у їхніх лексичних значеннях, сферах уживання та специфіці застосування у фахових текстах. Окрім цього, у статті здійснено спробу дослідити різноманітні чинники, що провокують активізацію паронімічних явищ у фаховій мові економістів, сприяючи дестабілізації термінологічної системи. Результати проведеного наукового дослідження можуть бути ефективно використані у процесі укладання та вдосконалення різноманітних лексикографічних праць економічного спрямування, під час розробки сучасних навчально-методичних матеріалів для студентів економічних спеціальностей, а також для цілеспрямованого підвищення рівня мовної компетентності фахівців зі сфери економіки з метою стабілізації та підвищення ефективності їхньої професійної комунікації

Ключові слова: комунікативна компетенція; культура мови; співзвучні слова; явище звукової подібності слів; семантика; терміносистема; функціонування

МІЖНАРОДНИЙ ФІЛОЛОГІЧНИЙ ЧАСОПИС

Науковий журнал

Том 29, № 1, 2025

Оригінал-макет видання виготовлено у відділі науково-технічної інформації
Національного університету біоресурсів
і природокористування України

Відповідальний редактор:

Н. Шевченко

Підписано до друку 27 лютого 2025 р.

Формат 70*100/16

Умов. друк. арк. 8,3

Наклад 100 прим.

Адреса видавництва:

Національний університет біоресурсів і природокористування України

03041, вул. Героїв Оборони, 15, м. Київ, Україна

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<https://philologicalscience.com.ua/uk>

INTERNATIONAL JOURNAL OF PHILOLOGY

Scientific Journal

Volume 29, No. 1, 2025

The original layout of the publication is made in the Department of Scientific
and Technical Information of National University of Life
and Environmental Sciences of Ukraine

Managing Editor:

N. Shevchenko

Signed for print of February 27, 2025

Format 70*100/16

Conventional printed pages 8.3

Circulation 100 copies

Editors Office Address:

National University of Life and Environmental Sciences of Ukraine

03041, 15 Heroiv Oborony Str., Kyiv, Ukraine

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<https://philologicalscience.com.ua/en>