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**Old Nordic *herðr* ‘shoulder’ and Greek
κορσις ‘behind, buttocks, ass’:
Is there any etymological
relationship between them?**

ELWIRA KACZYŃSKA

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Abstract

The article discusses a possible relationship between the Proto-Germanic term for ‘shoulder’ (ON. *herðr* f., Far. *herðar* f. pl.; Efd. *erde* f.; OHG. *harti*, *herti* f., MHG. *herte* f. < PG. **hardiz* f.) and the unexplained Greek gloss attested in the lexicon of Hesychius of Alexandria: *†κορσις· πυγή* (“*korsis*: behind, buttocks, ass”). It is suggested that the above-mentioned gloss comes from the Laconian dialect, which already in the Classical era (5th–4th c. BC) spirantized the Greek phoneme θ [t^h] > [θ] > Lac. σ [s]. The Laconian word *κορσις* goes back to the Doric appellative **κορθις*, which presumably derives from the Proto-Indo-European root **kerd^h-* ‘to fart, blow to, break wind’, secondarily ‘to stink, smell’ (cf. Ved. *sárdhate* ‘s/he breaks wind downwards’; Lat. *cerda* f. ‘dung’ attested in *mūscerdae* f. pl. ‘mouse droppings’, *ovicerda* f. ‘sheep dung’ etc.). The Laconian derivative has reliable semantic equivalents in other Indo-European languages (e.g. Skt. *śṛdhū-* f. ‘the anus, rump’, *śṛdhu-* m. ‘id.’). The Proto-Germanic term **hardiz* (gen. sg. **hardjōz*) ‘shoulder’ has no convincing etymology. Its juxtaposition with the Laconian word *κορσις* (< Doric Greek **κορθις* < IE. **kord^h-t̥s* f.) seems phonologically indisputable. Doubts are raised only by the semantic part of the proposed etymology. The author assumes

that ancestors of the Germanic people originally used the term **hardīz* (< PIE. **kord^h-ih₂-s* f.) to describe an extremely smelly part of the human body, i.e. the armpit located near the shoulder. The suggested change ‘anus, rump’ > ‘a stinking part of the body’ > ‘armpit’ > ‘shoulder’ must have taken place already in the Proto-Germanic epoch.

Keywords

Ancient Greek, etymology, Germanic languages, Hesychius of Alexandria, human anatomy, Indo-European linguistics, Laconian dialect, parts of the body.

Staronordyckie *herðr* ‘bark’ i greckie *κορσίς* ‘zad, pośladki’: Czy istnieje jakaś etymologiczna relacja między nimi?

Abstrakt

W artykule rozważa się możliwą relację pomiędzy pragermańską nazwą ‘barku’ (stnord. *herðr* f., far. *herðar* f. pl.; elfd. *erde* f.; stwniem. *harti*, *herti* f., śrwniem. *herte* f. < pgerm. **hardīz* f.) a nieobjaśnioną dotąd głosą grecką, zachowaną w leksykonie Hesychiosa z Aleksandrii: *†κορσίς πυγή* („*korsís*: zad, pośladki, tyłek”). Autorka sugeruje, że grecka głosa pochodzi z dialektu lakońskiego, który już w epoce klasycznej (V–IV w. p.n.e.) przeprowadził spirantyzację greckiego fonemu θ [t^h] > [θ] > lak. σ [s]. Wyraz lakoński *κορσίς* sprowadza się do doryckiego apelatywu **κορθίς*, który przypuszczalnie jest pospolitym derywatem utworzonym od rdzenia pie. **kerd^h-* ‘pierzcieć, puszczać wiatry’, wtórnie ‘śmierdzieć’ (por. wed. *śárdhate* ‘pierzdzi’; łac. *mūscerdae* f. pl. ‘mysie odchody’, *ovicerda* f. ‘owczy kał’ itd.), posiadającym wiarygodne odpowiedniki semantyczne w innych językach indoeuropejskich (np. skr. *śṛdhū*-f. ‘odbyt, tyłek’, *śṛdhu*-m. ‘ts.’). Pragermański termin **hardīz* (gen. sg. **hardjōz*) ‘bark’ nie posiada żadnej przekonującej etymologii. Jego zestawienie z lakońskim słowem *κορσίς* (< gr. dor. **κορθίς* < ie. **kord^h-ĩ-s* f.) wydaje się bezdyskusyjne pod względem fonologicznym. Wątpliwości wzbudza jedynie semantyczna strona propo-

nowanej etymologii. Autorka zakłada, że przodkowie ludów germańskich pierwotnie określali terminem **hardīz* (< pie. **kordⁿ-ih₂-s* f.) wyjątkowo śmierdzącą część ciała, czyli leżącą w okolicy barku pachę. Sugerowana zmiana semantyczna ‘odbyt, zadek’ > ‘śmierdząca część ciała’ > ‘pacha’ > ‘bark’ musiała dokonać się już w epoce pragermańskiej.

Słowa kluczowe

język grecki, etymologia, języki germańskie, Hesychios z Aleksandrii, językoznawstwo indoeuropejskie, dialekt lakoński, anatomia człowieka, części ciała.

1. Introduction

In his *Etymological Dictionary of Proto-Germanic* Guus Kroonen (2013: 211) reconstructs the Proto-Germanic term for ‘shoulder’, **hardī-* f. (*ih₂*-stem), on the basis of the following lexical data:

1.1. ON. *herðr* f. ‘shoulder’, usually *herðar* f. pl. ‘shoulders’, Icel., Far. *herðar* f. pl. ‘id.’; Nw. dial. *herd* ‘shoulder’; Da. dial. *hærde* ‘id.’; OSw. *hærþ* f. ‘shoulder’; Elfd. *erde* f. ‘id.’; OHG. *harti*, *herti* f. ‘shoulder blade / Schulterblatt’, MHG. *herte* f. ‘id.’ < PG. **hardīz* (gen. sg. **hardjōz*) f. ‘shoulder’ (Hellquist 1939: 959; de Vries 2000: 223; Orel 2003: 161–162; Kroonen 2013: 211).

1.2. The Saami and Balto-Finnic languages borrowed this term from a North Germanic source, cf. Saa. (Northern) *harddo* ‘shoulder’; Fi. *hartia* (from 18th c.), *hartio* (pl. *hartiat*, *hartiot*) ‘shoulder, armpit / Schulter, Achsel’; Ingr. *hartia* ‘shoulder’; Kar. *hartie*, usually pl. *hartiet* ‘shoulders’; Lud. *harddod* pl. ‘id.’; Veps *hařgot* pl. ‘id.’; Vot. *hartšia* ‘shoulder’ (Kylstra 1961: 40, 70; Kylstra, Hahmo, Hofstra, Nikkilä 1991: 84; de Vries 2000: 223).

Kroonen does not explain the origin of the Proto-Germanic noun in question, giving only a hypothetical Proto-Indo-Euro-

pean archetype (PIE. **kort-ih₂-s*, gen. sg. **kort-iéh₂-s¹*) and a concise statement: „No further etymology” (Kroonen 2013: 211).² He tacitly suggests that PG. **d* goes back to the Proto-Indo-European voiceless dental stop **t* in the position before the stress, according to Verner’s law.

Theoretically, the same archetype may be suggested for the Ancient Greek gloss, which is attested in the late antique lexicon by Hesychius of Alexandria (created most probably by the end of the 5th century AD): *†κορσίς· πυνή* (“*korsís*: behind, buttocks, ass”) (Cunningham 2020: 650). In fact, the Greek word *κορσίς*, denoting a part of the human body, may represent the same or very similar Proto-Indo-European protoform (e.g. PIE. **kortih₂s*, **körtih₂s*, **kortís* or **körtís*). The phonological aspects of the comparison seem to be complete and regular, as the phoneme **t* [t] was early assibilated to [s] in the position before the front vowel **i* [i] or **ī* [i:] in all the Attic-Ionic dialects, as well as in East Aeolic (Lesbian) and Mycenaean Greek (Buck 2009: 57–58). The root vocalism (**-o-*), the original stem (*i*-stem or **ih₂*-stem) and the oxytone stress are wholly compatible. Also all consonants seem to fit one after another (PG. **h-* perfectly corresponds to Gk. *κ-* and PG. **-r-* to Gk. *-ρ-*; PG. **-d-* agrees with Gk. *-σ-*, as both may develop from the Proto-Indo-European consonant **-t-* in the position before the stressed vowel **i*; PG. final **-z* wholly suits Gk. **-ς*). The first problem related to the Germanic-Greek pair of possible equivalents is connected with the great semantic difference: ‘shoulder’ in the Germanic languages and ‘behind, buttocks, ass’ in Ancient Greek. The second question refers to the morphological structure and possible derivation of the noun, as well as the etymological explanation of the Germanic and Greek words (if they are, in fact, related). In my paper I would like to verify the suggested comparison, explain the

¹ I prefer an alternative reconstruction of the genitive sg. of the *ih₂*-stem nouns: PIE. **-iéh₂-es*, hence via a regular phonological development: **-iáh₂as* > **-iáas* > IE. **-iās* > PG. **-jōz*.

² Similarly de Vries (2000: 223): „Die Etymologie ist umstritten”. Orel (2003: 161–162) gives a concise overview of earlier etymologies.

dialectal character of the Greek gloss (Section 2), reconstruct the early history of the Ancient Greek dialectism (Section 3), as well as to propose a new etymology for the Germano-Greek bundle of words (Section 4).

2. The Laconian origin of the Hesychian

gloss *†κοροῖς· πυγή*

The Greek noun *κοροῖς*, preserved by Hesychius of Alexandria in his lexicon of literary, rare or dialectal words, was completely absent in all the literary works written in the Homeric or epic dialect, Attic, Ionic, as well as in the Hellenistic koiné. Thus, it cannot be an Attic-Ionic lexical item. It can hardly be considered an East Aeolic (or Lesbian) element due to accentual reasons, as it does not exhibit the characteristic Aeolic barytonesis.

It is highly probable that the Hesychian gloss (κ-3664): *†κοροῖς· πυγή* “*korsís*: behind, buttocks, ass” (Cunningham 2020: 650) represents a dialectal word taken from the Laconian vocabulary. It is worth emphasizing that the next Hesychian gloss (κ-3665): *κοροῖν· κορμόν* acc. sg. “*korsón*: log” (Cunningham 2020: 650) also belongs to the purely Laconian terminology (Kaczyńska 2023: 201, 206). Lac. *κοροῖς* is a straightforward reflex of Gk. Dor. **κορθός* m. ‘something cut, log’, which is etymologically related to the Doric noun *κόρθῶς* f. coll. ‘handfuls of harvested grain, swaths’ (Kaczyńska 2023: 206). The Laconian dialect, belonging to the group of Doric or West Greek dialects, introduced a number of unusual phonological innovations beginning from the sixth century BC. One of them was spirantization of the aspirated dental stop: Gk. *θ* [tʰ] > [θ] > Lac. *σ* [s], e.g. Gk. Lac. *ἀνέσηκε* = Gk. Att. *ἀνέθηκε* ‘s/he gave, donated’, Gk. Lac. *σιοφόρος* = Att. *θεοφόρος* adj. ‘who carries the god’ (Pisani 1973: 101–104; Buck 2009: 59; Bartoněk 2011: 126–130; Méndez Dosuna 2015: 454–455; Kaczyńska 2014: 66–68; 2021: 47–61). This is why I am convinced that the dialectal term *κοροῖς* (probably of Laconian origin) represents Gk. Dor. **κορθίς* f. ‘behind, buttocks, ass’.

3. Greek *κοροίς* ‘behind, buttocks, ass’ from the etymological point of view

Greek dialectal word *κοροίς* f. ‘behind, buttocks, ass’ (interpreted as a Laconian term) regularly goes back to Doric Greek **κοροίς*. In my opinion, it derives from the Indo-European root **kerd^h-* ‘to fart, blow to, break wind’, secondarily ‘to stink, smell’ (cf. Ved. *śárdhate* ‘s/he breaks wind downwards’; Persson 1910: 167–169; Mayrhofer 1970: 310). It is related to Ved. *śárdhaḥ* m. ‘breaking wind, flatulence’ (< PIE. **kórd^hos* m.), Skt. *śardhanam* n. ‘the act of breaking wind’ (Monier-Williams 1999: 1058), *śṛdhū-* f. ‘anus, rump’, also *śṛdhu-* m. ‘id.’ (< PIE. **kr̥d^h-ū-*), as well as to Lat. *cerda* f. ‘dung’ (< PIE. **kerd^heh₂* f. ‘a stinking thing’), attested in the compound nouns: *mūs-cerdae* f. pl. ‘mouse droppings’, *ovi-cerda* f. ‘sheep dung’, *sū-cerdae* f. pl. ‘pig dungs’). Two Sanskrit nouns *śṛdhū-* f. ‘anus, rump’, also *śṛdhu-* m. ‘id.’ (Monier-Williams 1999: 1088) seem to be semantic and etymological equivalents of Gk. Lac. *κοροίς* f. ‘behind, buttocks, ass’ (< PGk. **κοροίς*), deriving from the Proto-Indo-European verbal root **kerd^h-* ‘to fart, blow to; to break wind; to stink, smell’.³ The Greek and Indo-Aryan nouns show an anatomical meaning: ‘behind, buttocks, ass, rump, arse’ (in Laconian Greek) and ‘anus, rump’ (in Sanskrit). Even if they are independent derivatives from the Proto-Indo-European verbal root **kerd^h-*, then their semantic agreement seems to document a primitive meaning ‘±a stinking part of the body; anus, rump, behind, ass, arse’ (or the like), strongly connected with the primitive sense ‘to fart, blow to, break wind; to stink, smell’, attested in Indo-Aryan.

³ According to Persson (1910: 167–169), Skt. *śardhate* ‘to fart / farzen’ derives from PIE. **ker(H)-* ‘to shit / scheißen’ (Pokorny 1959: 947–948; Rix, Kümmel 2001: 327) by means of the verbal suffix **-d^h-*. It is possible that the secondary root **kerd^h-* (documented in Indo-Aryan, Greek, Latin and perhaps Germanic) appeared as early as in the (Proto-)Indo-European times.

4. A new perspective on the Germano-Greek comparison: phonological and semantic aspects

It cannot be excluded that both ON. *herðr* f. ‘shoulder’ (< PG. **hardiz* f.) and Gk. Lac. *κορσις* ‘behind, buttocks, ass, rump, arse’ (< Gk. Dor. **κορθις*) represent a common Indo-European heritage. Theoretically, they may go back to the Proto-Indo-European archetype **kord^h-ih₂-s* (f. ‘±a stinking part of the body; anus, behind, ass, rump, arse’) and derive from the verbal root **kerd^h-* ‘to fart, blow to, break wind’, secondarily ‘to stink, smell’. The phonological aspects of the suggested comparison seem perfect.

Furthermore, the semantic divergence (‘behind, buttocks, ass, rump, arse, backside’ vs. ‘shoulder, shoulder-blade’) is not an exceptional phenomenon in anatomical terminology. Note that Greek (Attic, Ionic) *πῶρη* f. ‘behind, buttocks, ass, rump, arse’, also ‘backside or tail (of an ape, of a dog)’ (Montanari 2018: 1857; Diggle 2021: 1238), i.e. the explanatory term in the Hesychian gloss κ-3664, is etymologically related to Pol. *pyza* f. ‘plump and fat cheek’, dial. ‘a man with the large and fat face, as well as with round cheeks’, *pyzy* f. pl. ‘fat and plump cheeks’, *pyzaty* adj. ‘full, fat, round’ < PSl. **pyza* f. ‘plump, fat cheek’ (Boryś 2005: 507) < IE. **pūgā*. It may be suggested that PIE. **puHǵeh₂-* f. denotes ‘something bloated, swollen, round, greasy’, secondarily ‘a round and fat part of the body’, secondarily ‘buttock’ (in Greek) vs. ‘fat cheek’ (in Slavic).

The meaning, firmly registered in Ancient Greek (‘behind, buttocks, ass, rump, arse’), is to be treated as primitive, if the derivation of Lac. *κορσις* from PIE. **kerd^h-* ‘to fart, blow to, break wind’, secondarily ‘to stink, smell’ is correctly established, whereas the Proto-Germanic sense (‘shoulder’, also ‘shoulder-blade’) has to represent a semantic innovation. It is possible that the Proto-Germanic speakers in their north European homeland introduced a different notion of the most stinking part of the human body, thus they replaced the primitive meaning ‘anus, rump, behind, ass, arse’ attested in Ancient Greek and Sanskrit.

The semantic development in the Germanic languages can be reconstructed as follows: (PIE.) ‘anus, rump, behind, ass, arse’ > ‘a stinking part of the body’ > ‘armpit’ > (PG.) ‘shoulder’ > (OHG., MHG.) ‘shoulder-blade’.

5. Conclusions

The careful analysis of the Greek, Germanic, Italic and Indo-Aryan lexical data has led us to the following conclusions:

1. ON. *herðr* f. ‘shoulder’ and Greek *κοροίς* ‘behind, buttocks, ass’ seem to be related to each other, even if the Indo-European archetype **korti_h₂s* (f. *i_h₂*-stem), suggested by Guus Kroonen, cannot be accepted for a number of reasons (such as a lack of motivation, an unclear derivation, a semantic discordance).
2. The Greek noun *κοροίς*, preserved by Hesychius of Alexandria in his lexicon of literary, rare or dialectal words, was completely absent in all the literary works written in the Homeric (or epic) dialect, Attic, Ionic, as well as in the Hellenistic koiné. Thus, it cannot be an Attic-Ionic lexical item. It may hardly be treated as an East Aeolic (or Lesbian) ingredient for accentual reasons (it does not demonstrate the so-called Aeolic barytonesis). It is highly probable that *κοροίς* represents a dialectal word taken from the Laconian vocabulary.
3. Gk. Lac. *κοροίς* regularly goes back to Doric Greek **κοροίς* and derives from the Indo-European root **k_{er}d^h-* ‘to fart, blow to, break wind’, secondarily ‘to stink, smell’, cf. Ved. *śárdhate* ‘s/he breaks wind downwards’.
4. There are Indo-Aryan and Greek nouns with an obvious anatomical meaning: Sanskrit *śṛd_hū-* f. ‘anus, rump’, *śṛd_hu-* m. ‘id.’ and Gk. Lac. *κοροίς* f. ‘behind, buttocks, ass, rump, arse’. Their semantics is very similar, though their morphological structure is somewhat different.

5. It is likely that both ON. *herðr* f. ‘shoulder’ (< PG. **hardiz* f.) and Gk. Lac. *κοροίς* ‘behind, buttocks, ass’ (< Gk. Dor. **κοροθίς*) represent a common Indo-European heritage. Theoretically, they may go back to the Proto-Indo-European archetype **kord^h-ih₂-s* (f. ‘±a stinking part of the body; anus, rump, behind, ass, arse’) and derive from the verbal root **kérd^h-* ‘to fart, blow to, break wind’, secondarily ‘to stink, smell’.

6. It is also suggested that ancestors of the Germanic tribes replaced the primitive meaning ‘anus, behind, rump, ass’ (attested in Sanskrit and Greek). The semantic development in Proto-Germanic can be reconstructed as follows: (PIE.) ‘anus, rump, behind, ass’ > ‘a stinking part of the body’ > ‘armpit’ > (PG.) ‘shoulder’.

Abbreviations

acc. – accusative; adj. – adjective; Att. – Attic (dialect of Ancient Greek); coll. – collective; Da. – Danish; dial. – dialectal; Dor. – Doric (dialect of Ancient Greek); Elfd. – Elfdalian (Övdalian); f. – feminine; Far. – Faroese; Fi. – Finnish; gen. – genitive; Gk. – Greek; IE. – Indo-European; Icel. – Icelandic; Ingr. – Ingrian; Kar. – Karelian; Lac. – Laconian (dialect of Ancient Greek); Lat. – Latin; Lud. – Ludic; m. – masculine; MHG. – Middle High German; n. – neuter; Nw. – Norwegian; OHG. – Old High German; ON. – Old Norse; OSw. – Old Swedish; PG. – Proto-Germanic; PIE. – Proto-Indo-European; pl. – plural; Pol. – Polish; PSl. – Proto-Slavic; Saa. – Saami (Laponian); sg. – singular; Skt. – Sanskrit; Ved. – Vedic; Vot. – Votic.

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Polish *pieszny* and English *foot*: An analysis of a pair of cognates

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Abstract

The research concentrates on investigating the etymological relationship between the Polish term *pieszny* ‘pedestrian, on foot’, and the English word *foot*, both tracing their origins back to a common Proto-Indo-European root **ped-*. The objective of this study is to recognize and document the various morphological, phonological, and semantic changes that this shared ancestral word has experienced throughout its evolution. The study intends to prove that the Polish word *pieszny* and the English word *foot* represent cognates by demonstrating their shared elements and explaining changes that affected them.

Keywords

Polish-English cognates, etymology, Proto-Indo-European, contrastive analysis

Polski wyraz *pieszy* a angielski *foot*: Analiza pary wyrazów pokrewnych

Abstrakt

Artykuł ten koncentruje się na badaniu związku etymologicznego między polskim wyrazem *pieszy* i angielskim wyrazem *foot* 'stopa'. Oba te słowa wywodzą się od wspólnego praindoeuropejskiego rdzenia **ped-*. Celem badania jest rozpoznanie i udokumentowanie szeregu zmian morfologicznych, fonologicznych i semantycznych jakim uległ wspólny obu wyrazom etymon na przestrzeni wieków. Badanie ma na celu udowodnienie, że polskie słowo *pieszy* i angielskie słowo *foot* są wyrazami pokrewnymi, poprzez wykazanie ich wspólnych elementów oraz wyjaśnienie zmian, które na nie wpłynęły.

Słowa kluczowe

polsko-angielskie wyrazy pokrewne, etymologia, praindoeuropejski, analiza kontrastywna

1. Introduction

The paper focuses on exploring the etymological connection between the Polish word *pieszy* 'pedestrian, on foot', and the English word *foot*, which both originate from the same Proto-Indo-European word. The study aims to identify and list morphological, phonological, and semantic changes that this ancestral word has undergone over centuries. The paper's structure consists of seven stages, namely, (1) introduction, (2) methodology, (3) attestation, (4) morphological connection, (5) phonological connection, (6) semantic connection, and (7) conclusions. Section 1 introduces the topic. In section 2, the methodology of the research is presented. Section 3 focuses on the assessment of the time and scope of attestation. Section 4, section 5, and section 6 aim to explore word forms as well as changes in sounds

and meaning, respectively. In section 7, the findings are summarized.

2. Methodology

The research adopts the methodology of collecting Polish-English cognates proposed in Rychło (2019) and illustrated in several studies (Rychło 2012, 2013, 2016, 2018, 2021, Rychło and Witczak 2021). It consists of the following research stages: attestation, phonological connection, morphological connection, and semantic connection.

The first stage of the research involves assessing the time of attestation of the possible cognates under analysis as well as collecting and comparing cognates in languages that are closely related to each other in order to discover if the words at issue originate from the common ancestral language. The second and third stages of the research include comparing morphological and phonological structures between the words and explaining the differences that resulted from changes that have occurred over the centuries. The last stage involves analyzing the semantic connection between the cognates at issue. All these procedures aim to identify and analyze Polish-English cognates, while concentrating on the inherited elements (for more detail see Rychło 2019).

3. Attestation

3.1. Time

In his *Dictionary of Old Polish*, Urbańczyk (1988–1993: 118) includes the word *pieszny*, which has been attested since 1228. He mentions two senses of the word ‘the one that goes on foot’ and ‘associated with walking on foot’. Regarding English, the word *foot* is recorded in *The Oxford Dictionary of English Etymology* (Onions 1966: 368) and the Oxford English Dictionary, and both sources provide information that it has been attested since Old English with the original meaning of [t]he terminal part of the

leg, on which a person stands and walks’ (the OED). Therefore, both words have been attested since the earliest periods of the languages, and their connection with modern forms is evident.

3.2. Scope

According to Piwowarczyk (2022: 232), the Proto-Indo-European root **ped-* ‘to step, to fall’ can be found in all 12 Indo-European branches of languages:

Indo-Aryan: Vedic *pāt* m. ‘foot’, *pādaḥ* m. ‘foot’, also ‘foot or leg of inanimate object’; *pādúḥ* m. ‘foot, or shoe’, *pādā*, *pādau* m. nom.-acc. du. ‘two feet’, *padóḥ* gen.-loc. du., *padbhyām* instr.-dat.-abl. du.: Pali *pāda-* m. ‘foot’, Prakrit *pāda-*, *pāya-*, *pāa-* m. ‘foot’; Sindhi *pāo* ‘foot of a table’, Bengali *pā* ‘foot’ (Mayrhofer 1963: 249, 254, Mayrhofer 1992: 77–78, 120); Vedic *padām* n. ‘footstep, track, place’, Pali *pada-* n. ‘footstep, place, foot’, Prakrit *paya-* m. n. ‘footstep, foot’, Shina *pō* m. ‘footstep, step’, Bengali *payā* ‘leg or foot of a chair’, Gujarāti *payū*, *paiyū* n. ‘foot-track, especially the track over which bullocks move when drawing water’, Sinhalese *piya* ‘footmark’ and so on (Turner 1966: 437–438, 454–456).

Iranian: Avestan *pāδ-* ‘foot, leg’, *pāδa-* ‘footstep, step’, Old Persian *pāda-* m. ‘foot’; Khotanese *pai* ‘foot’, *pā* ‘feet’, Sogdian *p’δ* [*pāδ^a*] ‘foot’; New Persian *pā*, *pāy* ‘id.’; Balochi *pād* ‘id.’; Yidgha *palo* ‘foot’; Wakhi *pūid* ‘foot’; Shughni *pōδ* ‘foot’, *pōδēv* ‘at the foot, below’; Bartangi and Oroshori *pēδ* ‘foot’, Khufi *pūδ* ‘id.’; Roshani *pūδ* ‘foot’, *pūδīv* ‘at the foot, below’; Sarikoli *ped* ‘foot’, *padef* ‘at the foot, below’; Sanglechi *pūδ*, Ishkashimi *pud*, Yazghulami *pēδ*, Munjani *pāla*, Yaghnobi *pōda*, Ossetic *fad* ‘foot, leg’, *fæd* ‘trace’ etc. (Abaev 1958: 414, 427; Bailey 1979: 227–228; Morgenstierne 1974: 54).

Slavic: Russian *pěšij* adj. ‘pedestrian, on foot’, Czech *pěší* adj. ‘pedestrian, on foot’, Slovak *peší* adj. ‘pedestrian, on foot’, Serbian/Croatian *pjěše*, *pjěškē* adv. ‘on foot’, Slovene *pěšji*, *pěški*

adj. ‘pedestrian, on foot’, Bulgarian *peš*, *pešá* adv. ‘on foot’ < PSl. **pěšь* (Derksen 2008: 398).

Baltic: Lithuanian *pėdà* f. ‘foot, footstep, footprint, sheaf; length measure equalling 12 inches’, *pėduoti* vb. ‘to leave footmarks, walk slowly’, Latvian *pēda* f., *pēds* m. ‘footstep, footprint, trap; foot as a measure of length’, *pēduôt* vb. ‘to leave footmarks’, Old Prussian *pedan* n. ‘ploughshare’ (Derksen 2015: 347, 353; Smoczyński 2018: 934–5).

Armenian: Old Armenian *otn* ‘foot’, pl. *otk* ‘feet’ (*n*-stem in singular, *i*-stem in plural), *het* (*o*-stem) ‘foot; footstep, footprint, track’, *heti* adv. ‘on foot’ (Martirosyan 2010: 405, 534–35).

Albanian: *poshtë* adv. ‘down, below’, prep. ‘under’ (Orel 1998: 340)

Tocharian: Tocharian A *pe* m. ‘foot’ (Carling and Pinault 2023: 293), *peṃ* m. du. ‘two feet’, Tocharian B *paine* m. du. ‘two feet’, *painesa* gen. du. ‘of two feet’ (Adams 2013: 432).

Anatolian: Hittite *pat(a)*- ‘foot, leg; footing, base’, Luwian *pāta/i*- ‘foot’, Hieroglyphic Luwian *pada/i*- ‘foot’, Lycian *pededi* abl.-instr. ‘by the feet’ (Kloekhorst 2008: 653–54; Puhvel 2011: 196).

Hellenic: Greek (Attic & Ionic) *ποῦς*, gen. sg. *ποδός* m. ‘foot’; Doric *πῶς*, Laconian *πόρ* m. ‘id.’ (Beekes 2010: 1227); for the dual forms, see Mycenaean Greek *ti-ri-po-de* [tripode] m. du. ‘two tripods’ (Aura Jorro 1993: 352).

Italic: Latin *pēs*, *pedis* m. ‘foot’ (de Vaan 2008: 462); Umbrian *peři*, *persi* abl. sg. ‘pede’, *peřum* acc. sg. ‘Erdboden, Boden; Stelle, Platz (am Boden)’; Oscan *pedú* acc. pl. ‘foot (as a measure of length)’ (Untermann 2000: 522–524).

Celtic: Proto-Celtic **fódes* m. ‘foot’ in Galatian *ádes* pl. ‘feet’, PC **fissu*- prep. ‘under’ (< PIE. **pēdsú*), PC **fedon* ‘foot as a mea-

sure of area' in Lat. *candetum* (*cantedum*) n. 'measure of a field, used by the Gauls, which was one hundred feet' < Gaulish **cantedon* '100 feet' (Matasović 2009: 131, 136).

Germanic: Gothic *fotus* n. m. 'foot', Old Norse *fótr* n. m. 'foot, leg', Faroese *fótur* n. m. 'foot', Elfdalian *fuot* n. m. 'foot, leg', Old English, Old Frisian *fōt* 'foot', Dutch *voet* 'foot', Old High German *fuoz* 'foot', German *Fuß* 'foot' < Proto-Germanic **fōt-* (Kroonen 2013: 152).

The linguistic evidence presented in this stage seems to ensure that the words found in all branches of IE languages come from the same reconstructed Proto-Indo-European word. Ringe (2006: 47) provides a paradigm of the masculine noun **póds* 'foot' (presented in Table 1) from which later Polish *pieszy* and English *foot* developed.

Table 1

Noun paradigm of PIE **póds* 'foot'

case	Singular	Dual	Plural
nominative	*póds	*pódeh ₁ / *pódeh ₁ u	*pódes
vocative	*pód	*pódeh ₁ / *pódeh ₁ u	*pódes
accusative	*pódṃ	*pódeh ₁ / *pódeh ₁ u	*pódṃs
instrumental	*pedéh ₁	*pedb ^h éh ₁ m	*pedb ^h í
dative	*pedéy	*pedb ^h éh ₁ m	*pedmós
ablative	*pedés	*pedb ^h éh ₁ m	*pedmós
genitive	*pedés	*pedóus	*pedóHom
locative	*péd(i)	*pedóus	*pedsú

(Ringe 2006: 47 with modifications by the author, regarding the dual¹)

¹ The dual inflection of the Proto-Indo-European noun for 'foot' is generally reconstructed on the basis of Vedic data, cf. nominative – vocative – accusative

4. Morphological connection

4.1. Case and ablaut

Regarding Table 1, it is evident that the noun shows **ō* in the root-syllable in the nominative, vocative, and accusative, whereas **e* is present in the remaining cases. This change of vowels refers to ablaut, the alternation of different phonemes (**ē*, **e*, *∅*, **o*, **ō*, **ā*, **a*) within the same morpheme, which is morphologically conditioned (Długosz-Kurczabowa and Dubisz 2006: 94, Ringe 2006: 10). It seems that the cognates at issue could not evolve from the same case. It can be noticed in the vowels of OE *fōt* and PSl. **pěšb* which point to different ablaut grades – *ō* and *e*, respectively. According to Kroonen (2013: 152), English *foot* developed from the singular nominative Proto-Indo-European form **pōds*. According to Boryś (2005: 432), Polish *pieszy* developed from the plural locative dialectal form **ped-si*. On the other hand, Ringe (2006: 47) provides a different form, namely, **pedsú*. As it can be observed, the forms of Proto-Indo-European words may vary depending on the source since different linguists reconstruct them differently. In this article, the Ringe's reconstruction will be adopted.

4.2. Grammatical category

The comparanda under study also differs in the part of speech. Both words developed from the Proto-Indo-European masculine noun. However, while English *foot* is still a noun, Polish *pieszy* is a nominal adjective, that is, an adjective that is used as a noun. Other examples of this phenomenon can be illustrated with the following examples: *głuchy* 'deaf', *niewidomy* 'blind', *oskarżony* 'accused', *święty* 'saint', *poszukiwany* 'wanted', *obląka-*

du. (RV 1.24.8c; 2.39.5d; 6.29.3a; 6.47.15c; 10.73.3a; 10.90.11d; 10.106.9b, Malzahn 1999: 41), instrumental – dative – ablative du. (RV 10.90.12d+; Malzahn 1999: 64), genitive – locative du. (RV 10.116.2c, Malzahn 1999: 61).

ny ‘insane’ to name but a few. Townsend and Janda (1996: 177) suggest that Slavic adjectives emerged from nouns as a separate category. The change significant to the cognates at issue occurred by the “attachment of forms of the LCS pronominal 3rd sg demonstrative pronoun *jъ* to the appropriate nominal forms of both direct (N, A) and oblique (G, D, I, L) cases” (Townsend and Janda 1996: 178). The examples provided in Table 2 illustrate this morphological operation.

Table 2
Emergence of adjectives

Late Church Slavonic	Polish
новъ + <i>jъ</i>	nowy ‘new’
dobrъ + <i>jъ</i>	dobry ‘good’
starъ + <i>jъ</i>	stary ‘old’
glupъ + <i>jъ</i>	głupi ‘stupid’
tanъ + <i>jъ</i>	tani ‘cheap’

(Townsend and Janda 1996: 177–78, Długosz-Kurczabowa and Dubisz 2006: 98, Strutyński 2002: 42)

Hence, it seems that PSl. **pěšъ* developed into P *pieszy*.

4.3. Inflectional class

Regarding noun inflection, the Proto-Indo-European word denoting ‘foot’ was classified as an athematic root-consonant stem. This categorization implied that it did not end in a thematic vowel; instead, its inflectional endings were attached directly to the root itself (Ringe 2006: 41, Algeo 2010: 95). Interestingly, while English appears to have retained the Proto-Indo-European form (Kroonen 2013: 152), the Polish word *pieszy* points towards the *jo*-stems (Długosz-Kurczabowa and Dubisz 2006: 184, 240, Strutyński 1998: 126–127). This shift in morphology is not an isolated occurrence and can be further observed in such pairs as English *mouse* and Polish *mysz* ‘mouse’, English *goose* and Polish *gęś* ‘goose’, as well as English *night*

and Polish *noc* ‘night’ in which English words point to the root nouns and Polish to the *i*-stem. What is more, it seems that the transferal from one inflectional class to another is not limited to any particular stem (Rychło 2019: 74–80). Therefore, it may be reasonably assumed that the Polish word underwent a morphological transformation initially to the *i*-stems and subsequently to the *jo*-stems.

4.4. Dual number

In Proto-Indo-European, nominals, that is, nouns, pronouns, adjectives, determiners, and most quantifiers were inflected for number. It was differentiated into singular, dual, and plural, where the dual represented the concept of ‘two’ or ‘a pair of’ (Ringe 2006: 22). The foot, similarly to other parts of the body, occurs as a natural pair and thus it was often used in the dual form (Malzahn 1999: 64, 66). In Modern Polish, there are some remnants of the dual number, which was still present in Old Polish, which exhibit irregular plural influenced by the dual number (Długosz-Kurczabowa and Dubisz 2006: 222), see *P oczy* n. pl. ‘eyes’ (originally Proto-Slavic **oči* n. du. ‘two eyes’) vs. *oka* pl. ‘drops of fat in the soup’ and *P uszy* pl. ‘ears’ (originally Proto-Slavic **uši* n. du. ‘two ears’) vs. *ucha* pl. ‘handles (of a cup)’.

Regarding English, the dual number was already on the verge of extinction in Proto-Germanic. However, traces of fossilized duals can be found in some nominal forms. Fritz (2011: 115) suggests that OE *æt fōtum* ‘on both feet’ indicates a possible indication of the dual number in the form of the *u*-stem. Additionally, the *u*-stem can be found in more Germanic words for ‘foot’, for example, Gothic *fotus* and Proto-Germanic **fōtuz* (Kroonen 2013: 152, Orel 2003: 110) suggesting that the dual form has left its remnants in the Germanic noun paradigms.

5. Phonological connection

5.1. The Germanic Line – sound changes that occurred from Proto-Indo-European to Modern English

5.1.1. Grimm’s Law: $*p > *f$ and $*d > *t$

Grimm’s Law is one of the earliest and most characteristic Germanic sound changes which differentiates the Germanic branch from other Indo-European languages (Kroonen 2013: xxvii). According to Grimm’s Law, the Indo-European voiceless plosives ($*p$, $*t$, $*k$, $*k^w$) underwent spiratization and became voiceless fricatives ($*f$, $*þ$, $*h$, $*h^w$), respectively. Unaspirated voiced plosives ($*b$, $*d$, $*g$, $*g^w$) were devoiced to voiceless plosives ($*p$, $*t$, $*k$, $*k^w$) and voiced plosives ($*b^h$, $*d^h$, $*g^h$, $*g^{wh}$) became voiced fricatives ($*β$, $*ð$, $*ɣ$, $*ɣ^w$) or unaspirated voiced plosives ($*b$, $*d$, $*g$, $*g^w$) depending on the phonological environment (Rychło 2014a: 452–454, Rychło 2014b: 202, Ringe 2006: 93–94). The instances of changes from $*p > *f$ and $*d > *t$ provided by Ringe (2006: 94–96) are illustrated below:

- (1) PIE $*p_l h_1 n_ó s$ ‘full’ > PGmc $*fullaz$ > OE *full*
 PIE $*p_én k^w e$ ‘five’ > PGmc $*fimf$ > OE *fiif*
 PIE $*h_1 d_ón t-$ ~ $*h_1 d_ñ t-$ ‘tooth’ > PGmc $*tanþ-$ ~ $*tund-$ < OE *tōþ*
 PIE $*ád$ ‘at’ > PGmc $*at$ > OE *æt*
 Therefore, it appears the PIE word $*p_ó d s$ developed into the PGmc $*f_ót-$ and OE *fōt* accordingly with Grimm’s Law ($*p > *f$ and $*t > *d$).

5.1.2. The Great Vowel Shift: [o:] > [u:]

The Great Vowel Shift is yet another salient phonological change that occurred in the development of English history. In early Modern English, the quality of all Middle English long vowels was altered. This change can be illustrated as presented in Table 3.

Table 3
The Great Vowel Shift

1400	1500	1600	Modern English
i:	eɪ	ɛɪ	aɪ
e:	i:	i:	i:
ɛ:	ɛ:	e:	i:
a:	a:	ɛ:	eɪ
u:	ou	ɔʊ	aʊ
o:	u:	u:	u:
ɔ:	ɔ:	o:	əʊ

(Lass 1999: 72)

The high vowels [i:] and [u:] underwent diphthongization and were lowered to [aɪ] and [aʊ]. The mid vowels [e:] and [ɛ:] merged into one high vowel [i:], [o:] was raised to [u:], and [ɔ:] was diphthongized to [əʊ]. The low vowel [a:] was fronted, raised, and diphthongized to [eɪ] (Lass 1999: 11, 72, Algeo 144–147). Rychło (2019: 57) provides examples of words in which the change from [o:] to [u:] occurred: *food*, *loose*, *noon*, *tooth*, and *soon* to name but a few. Considering the above-mentioned shifts in vowels it seems that the long vowel [o:] in the OE word *fōt*² has changed its quality and become [u:] in the early Modern English period.

5.1.3. Laxing of [u:] > [ʊ]

During the Late New English period, long [u:] was shortened to [ʊ] if the vowel preceded the following consonants: a voiceless velar plosive [k], bilabial nasal [m], and alveolar plosives [t] and

² Slightly diverging from the discussion at issue, it seems worthwhile to highlight the major changes of the root vowel during the evolution of the Proto-Germanic plural form **fōtiz* to Modern English *feet* /fi:t/. The front vowel **i* in the second syllable triggered *i*-umlaut, resulting in the fronting of the back vowel in the preceding syllable (**ō* > **ē*) (Ringe and Taylor 2014: 222–227). Subsequently, as the result of the Great Vowel Shift, Middle English [e:] was raised and fronted to [i:] (Lass 1999: 11, 72). The changes could be illustrated in the following way: Proto-Germanic **fōtiz* ‘feet’ > Old English *fēt* > Early Modern English *feet* /fi:t/.

[d] (Welna 1978: 233). Welna provides examples of words in which the change occurred: *book*, *cook*, *broom*, *room*, *good*, *hood*, and *soot*. Therefore, it can be assumed that the change also affected the word *foot*.

5.2. The Slavic Line – sound changes that occurred from Proto-Indo-European to Modern Polish

5.2.1. Winter's Law

According to Winter, Balto-Slavic short vowels underwent lengthening and became long acute vowels under the following conditions. If a short vowel was placed in an acute syllable, and it preceded a voiced, but not aspirated, plosive, the process occurred; otherwise, the vowel remained short. That is why Slavic and Baltic reflexes of PIE **wēdh-* 'lead' reveal a long vowel (Lithuanian *vèsti*), whereas other IE languages exhibit a short vowel (Sanskrit *v̄dhūh*, Irish *fedim*) (Collinge 1985: 225, Piwowarczyk 2022: 244). Thus, it seems that short **e* in PIE **ped-su-* was lengthened accordingly with Winter's Law, which resulted in long **ě* in Proto-Slavic.

5.2.2. Loss of plosives before fricatives

In the pre-Slavic era (around 1–5th century), clusters of a plosive (**p*, **b*, **t*, **d*, **k*, **g*) and a fricative (**s*, **z*, **x*) were subjects to another change. However, since there is a shortage of reliable examples which would include **z* and **x*, the change was reformulated to plosive and **s*. Firstly, due to obligatory regressive assimilation in voicing, voiced plosives were devoiced, and then voiceless plosives were dropped (Shevelov 1964: 188). This phenomenon is clearly visible when comparing words that come from the same Balto-Slavic lexical unit – **kanʔd-*. Unlike Polish *kęs* 'piece, bit, morsel', Slovene *kōs* 'piece', Czech *kus* 'piece', or Slovak *kus* 'piece', Lithuanian *kqsti* 'to bite', *kānda* 'to bite, 3 pres.' retained traces of the Balto-Slavic **d* (Shevelov 1964:

188, Derksen 2008: 243, Derksen 2015: 231). Consequently, **d* in Balto-Slavic **pēdsu* was devoiced and lost under the influence of **s* resulting in **pēsū*.

5.2.3. Rise of jers and analogy

In the early 9th century, Slavic **ū* and **i* evolved into new vowels – a back jer **ъ* and a front jer **ь*, respectively. These vowels were pronounced with less tension regarding lips and the tongue. The front jer palatalized preceding consonants and the back jer did not (Shevelov 1964: 433–434, Strutyński 2002: 36). Therefore, **pēsū* developed into **pēsъ*. It might be suggested that later this form was replaced by **pěxъ*, which was created by analogy to many other locative plurals ending in *-ěxъ* (< PIE **-oisu*), **-ьxъ* (< PIE **-isu*), **-ъxъ* (< PIE **-usu*)³ (Lehr-Splawiński and Bartula 1959: 46). The form **pěxъ*, with the analogical ending **-xъ*, has been preserved in many Polish derivatives, such as *piechota* ‘infantry’, *piechotnik* ‘the one who walks on foot, infantryman’, *piechur* ‘infantryman’ or vernacular *piechta*, *piechty* ‘on foot’.

5.2.4. Iotation and loss of jers

In the Proto-Slavic language, two distinct types of palatalization occurred – the palatalization of velars due to the influence of front vowels, and the palatalization triggered by **j*, called iotation. The latter is essential to the study since, among many others, the cluster of **xj* underwent palatalization to **š* (Długosz-Kurczabowa and Dubisz 2006: 141). Firstly, the palatal articulation of **j* influenced the pronunciation of the preceding consonants,⁴ in this case **x*, and later, the approximant was lost (Shevelov 1964: 207), as in, for example, **syxjō* ‘I carry’ > *styšę*

³ The change from Proto-Indo-European **s* to Proto-Slavic **x* could be explained by the Ruki rule. As implied by the name, it occurred when **x* was preceded by **r*, **u*, **k*, and **i* (cf. P *mech* < PSl. **mьxъ* < PIE **mūs-o-m*) (Rychło 2019: 72–73).

⁴ Consonants which underwent the change comprise: **p*, **b*, **m*, **ν*, **n*, **r*, **l*, **t*, **d*, **s*, **z*, **k*, **g*, **x* (Strutyński 1998: 65–66).

(Długosz-Kurczabowa and Dubisz 2006: 141). Similarly, it appears that **pexjo*⁵ evolved into **pešo*, and later, into **pešb*.

As mentioned before in the section connected to morphology, in Late Church Slavonic, the suffix **-jb* was attached to the form **pěšb* resulting in **pěšbjb* (Townsend and Janda 1996: 178). However, already in the second half of the 10th century, the jers were dropped (Shevelov 1964: 634). The final cluster **-bjb* was changed into *-i*, for instance, **tanbjb* developed into *tani* ‘cheap’ (Długosz-Kurczabowa and Dubisz 2006: 98). Consequently, it appears that **pěšbjb* evolved into **pěši*.

5.2.5. Palatalization of [p]

The process of palatalization affected consonants which were followed by any Proto-Slavic front vowels. Under the influence of front vowels, consonants acquired additional pronunciation, that is, the tongue was raised to the hard palate. Moreover, when labial consonants are palatalized, they are articulated in two different ways – labial and palatal. When these articulations are completed simultaneously, they result in synchronous palatalization. However, if the tongue movement is delayed in comparison with the lip movement, the palatalization is called asynchronous, and it involves epenthesis – an addition of a sound, in this case [j]. This change is evident in the following examples: PSl. **pъnb* > P *pień* ‘trunk’, PSl. **vъsb* > P *wieś* ‘village’, PSl. **pęstb* > P *pieść* ‘fist’ (Długosz-Kurczabowa and Dubisz 2006: 139, 144–148, Rychło 2012: 29). Hence, it seems reasonable to assume that [p] before the front vowel [e] was affected by an asynchronous palatalization and became **pieši*.

5.2.6. Hardening of historically soft consonants

In the 15th and 16th centuries, originally palatal consonants inherited from Proto-Slavic were hardened due to an excess of

⁵ The emergence of **jo* is strictly connected to morphology; as noted earlier, it seems that **pěsb* underwent a morphological shift from a root-consonant stem to the *jo*-stem.

palatal phonemes and disruption of the phonological balance. This group of consonants, which is also called historically soft, includes – s, z, ś, ź, ć, ż, c, ʒ. This process of depalatalization is strictly connected with the replacement of *-i* to *-y*, which occurred after originally palatal consonants (Rospond 1979: 91, 112–113). To illustrate this change, one can consider the following examples provided by Rospond:

- (3) PSl. *šija > P *szyja* ‘neck’
 PSl. *žito > P *żyto* ‘rye’
 PSl. *vl’ci > P *wilcy* ‘wolves’

Consequently, Slavic *š developed into Polish [ʃ], and hence the change from *-i* to *-y* also occurred.

6. Semantic connection

It is clear that the English word *foot* retains the original meaning of PIE *pód-s. However, the meaning of Polish *pieszny* is slightly different. This difference in meaning may be the result of the fact that they have derived from different cases of the same lexical unit – *foot* from nominative singular and *pieszny* from locative plural. Boryś (2005: 432) already translates PIE *ped-si- as ‘on foot’, which already closely resembles the modern meaning of ‘the one that walks on foot.’

7. Conclusions

The Polish word *pieszny* derived from the Proto-Indo-European locative plural noun *ped-sú, which reflects *e*-grade. According to Winter’s Law, the vowel *e was lengthened. Subsequently, the sound *d was lost under the influence of the following fricative *s. The rise of jers resulted in the change of the vowel *u to the back jer. Subsequently, *pěsъ was replaced by *pěxъ, which emerged through analogy to other locative plurals. The morphological transferal to the *jo*-stems followed. Under the influence of *j, *x was palatalized to *š. The pronoun *-jъ was attached to

the Proto-Slavic **pěšь*. Thereafter, the jer was lost, and the palatalization of [p] before a front vowel occurred. Lastly, the originally soft consonant *š was depalatalized, which led to the change from -*y* to -*i*.

Regarding the English word, it developed from the Proto-Indo-European nominative singular noun **póds* ‘foot’ whose root vowel exhibited *ō*-grade. The change of **p* > **f* and **d* > **t* can be explained by Grimm’s Law which, among other changes, includes the transition of voiceless plosives into voiceless fricatives and voiced plosives into voiceless plosives. The vowel was firstly altered from [o:] > [u:] during the Great Vowel Shift, and later, laxed from [u:] > [ʊ].

Based on the changes described in this article, it seems evident that Polish *pieszy* and English *foot* originate from the same Proto-Indo-European word and are therefore cognates. Although the words differ regarding morphological and phonological form as well as semantics, the changes that affected them are shown proving their relation. Table 4 presents and summarises the development of the pair of cognates at issue.

Table 4
Summary

The Germanic line (from PIE to Modern English)		The Slavic line (from PIE to Modern Polish)	
PIE * <i>póds</i> > E <i>foot</i> / <i>fot</i> /		PIE * <i>ped-sú</i> - > P <i>pieszy</i>	
PIE * <i>póds</i>	<i>ō</i> -grade (only in the nominative singular)	PIE dial. * <i>ped-sú</i>	<i>e</i> -grade (locative plural)
PIE * <i>póds</i> , acc. * <i>pódṃ</i> , gen. * <i>pedés</i>	Root noun with the static and apophonic inflection	* <i>pēdsu</i>	Winter’s Law

* <i>póds</i> , pl. * <i>pódes</i> , gen. sg. * <i>pōdés</i> etc.	Generalization of the long apophonic grade in the paradigm (in some North-West Indo-European languages)	* <i>pēsu</i>	Loss of * <i>d</i> in the cluster of a plosive and fricative
PGmc * <i>fōt-</i>	Grimm's Law (* <i>p</i> > * <i>f</i> , * <i>d</i> > * <i>t</i>)	PSl. * <i>pěsb</i>	Rise of jers
PGmc dial. * <i>fōtuz</i>	Emergence of the secondary <i>u</i> -stem in some Germanic languages (cf. Goth. <i>fotus</i> , OE <i>fōtum</i>) presumably based on certain declensional forms of the dual number	PSl. * <i>pěxb</i>	Analogy to locative plurals ending in <i>-ěxb</i> (< PIE * <i>-oisu</i>), * <i>-xb</i> (< PIE * <i>-isu</i>), * <i>-xb</i> (< PIE * <i>-usu</i>)
OE <i>fōt</i> <i>foot</i> /fo:t/		PSl. * <i>pěšb</i>	Morphological shift to <i>jo</i> -stems Iotation
<i>foot</i> /fu:t/	Great Vowel Shift	PSl. * <i>pěšbjb</i>	Addition of a pronoun * <i>-jb</i>
E <i>foot</i> /fʊt/	Laxing of [u:] > [ʊ]	* <i>pěši</i>	Loss of jers
		OP * <i>pieši</i>	Palatalization of [p]
		P <i>pieszy</i>	Hardening of historically soft consonants Retraction and lowering of <i>-i</i> to <i>-y</i>

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Polish *wydra* and English *otter*

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Abstract

The aim of this paper is to trace the development and relationship between Polish *wydra* and English *otter* in a broader Indo-European context. The methodology of the research involves three steps: gathering cognates (to determine the time and place of attestation), identifying morphological structure and describing the sound changes that have occurred in two descending lines of development: one, from Proto-Indo-European **ud-r-eh₂* leading to Polish *wydra*, and the other, from Proto-Indo-European **ud-r-o-* to English *otter*. The analysis leads to the conclusion that the word for ‘otter’ in Proto-Indo-European must have had distinct masculine and feminine forms and, structurally, represents a substantivized adjective meaning ‘aquatic’: its root was the zero-grade form of PIE **uod-r/n-* ‘water’ and the *-r-* suffix used to perform the adjectival function.

Keywords

etymology, Polish-English cognates, Proto-Indo-European, zoonyms

Polski wyraz *wydra* a angielski *otter*

Abstrakt

Celem tego artykułu jest prześledzenie rozwoju oraz związku pomiędzy polskim słowem *wydra* i jego angielskim odpowiednikiem *otter* w szerszym kontekście języków indoeuropejskich. Metodologia obejmuje trzy etapy: zebranie wyrazów pokrewnych (celem określenia czasu i miejsca poświadczenia), zidentyfikowanie struktury morfologicznej oraz opisanie zmian dźwiękowych, które zaszły w ramach procesu przekształcania się praindoeuropejskiego **ud-r-eh₂* w polskie słowo *wydra* oraz praindoeuropejskiego **ud-r-o-* w angielskie słowo *otter*. Przeprowadzona analiza prowadzi do wniosku, że praindoeuropejskie określenie wydry musiało mieć odrębne formy: męską i żeńską, a strukturalnie, słowo to było substantywizowanym przymiotnikiem o znaczeniu ‘wodny/wodna’. Śladem po sufiksie przymiotnikowym jest *-r-*, które odnajdujemy również w takich przymiotnikach jak *mokra*, *stara*, *dobra*, *chora*, a rdzeniem musiał być pie. **uod-r/n-* ‘woda’ w stopniu zaniku.

Słowa kluczowe

etymologia, polsko-angielskie wyrazy pokrewne, praindoeuropejski, zoonimy

1. Introduction

The paper concentrates on the etymological connection between the English word *otter* and the Polish word *wydra*, both of which are descended from Proto-Indo-European **ud-r-o/eh₂*. Over the centuries this ancestral word has undergone numerous sound changes which we wish to recognize and list chronologically in the conclusions. Section 2 focuses on the methodology of the research. In Section 3, we present the linguistic evidence and investigate the time and scope of attestation. Sections 4 and 5 concentrate on the morphological and phono-

logical analyses, respectively. Section 5 is further subdivided into 5.1: sound changes that occurred from Proto-Indo-European to Polish; and 5.2: the phonological developments from Proto-Indo-European to English. Section 6 is devoted to semantic analysis. In the Conclusions, we present a table, which summarizes the findings.

2. The methodology of the research

The methodology of the research is thoroughly described in Rychło (2019) and illustrated with several case studies (Rychło 2012, 2013, 2016, 2018, 2021, Rychło and Witczak 2021). The present section offers the most important principles relevant to the cognates under analysis.

The methodology used in this comparative analysis includes the following research stages:

- (1) assessment of the time of attestation,
- (2) assessment of the scope of attestation,
- (3) the morphological analysis,
- (4) the phonological analysis.

Stage 1 consists in confirming that the candidates for cognates have been attested in the compared languages since the earliest period in the recorded histories of both languages. In the case of the pair: Polish *wydra* vs English *otter*, there is no doubt about it, as the word *wydra* is recorded by the *Dictionary of Old Polish* and the English *otter* has been attested since the Early Old English *otr* 'otter' in the Épinal Glossary (Pheifer 1974: 32, line 585). However, in other cases, there are sometimes pairs of words in compared languages which look alike, because one or both of them were borrowed at some point in history.

Stage 2 attempts to determine the prehistory of the cognates at issue. Although there is no way of ascertaining the form of words in written sources before the time of their earliest attestation, it is possible to reconstruct the prehistoric words with

some degree of probability. To this end, it is necessary to compare the corresponding words in the cognate languages starting from the most closely related ones. In the case of Polish *wydra* vs English *otter*, in Section 3, we present an extensive scope of attestation in numerous languages from all the sub-branches of Slavic and Germanic. Based on this comparison, there is little doubt that we can reconstruct PS1. **vydra* and PGmc **utra*. Apart from Slavic and Germanic, the cognates are also attested in five other branches: Indo-Aryan, Iranian, Hellenic, Italic and Baltic, which leads to postulating secure Proto-Indo-European archetypes **ud-r-o-* and **ud-r-eh₂*.

Stage 3 investigates the structure of each of the cognates at issue. This stage involves the following steps:

- A. Determining which morphological material in a pair of words is cognate (shared and inherited).
- B. Determining the word-formation processes involved in deriving each of the words under analysis.
- C. Revealing the structural meaning of the words in question.

Stage 4 aims at clarifying the phonological differences between the compared words. To this end, an attempt will be made to find out which sound changes have affected each of the compared words, and when these phonological processes occurred. In order to be more convincing, the postulated sound changes should be illustrated with further examples of words (and cognates) which exhibit the same effects.

Apart from the four stages described above, the methodology also includes a semantic connection, which can be illustrated with an investigation of the set of cognates containing Gothic *wopjan*, English *weep* and Polish *wabić* (Rychło 2016). Full details of the analytical methodology are described in Rychło (2019).

3. The linguistic evidence

Cognates can be found in the following languages:

INDO-ARYAN: Sanskrit *udrá-* m. ‘aquatic animal’, Pali *udda-* m., Prakrit *udda-* n. ‘merman, a kind of fish, garment made out of its skin’, Waigali or Wai-alā *udrə-wačalók* ‘otter’, Pashai (Raverty) “*húl*”, Gawar-Bati *uλ*, Bashkarik *ūl*, Savi *uλ*, Phalūra *ūdr* m., Shina *ūzū* m., Kashmiri *wōd°r°* m., Sindhi *udru* m. ‘glutton’; Lahndā *uddru*, (Jukes) *udr* m. ‘otter’, Panjābī *uddar* m. ‘otter, stupid person’, West Pahārī Bhadrawāhī dialect of West Pahārī, Bhiḍlāi sub-dialect of Bhadrawāhī dialect of West Pahārī, Bhalesī dialect of West Pahārī *uḍl* n. ‘otter’, Kumaunī, Nepālī *od*, Assamese *ud*, Bengali *ud-biṛāl*, Oṛiyā *oda*, Maithilī, Bhojpurī, Hindī *ūd* m., Marāṭhī *ūd* m. ‘a partic. depredating animal, Typus paradoxurus (?)’. There are also several forms with unexplained *dh*: Lahndā *uddhru* m. ‘otter’, Panjābī *ud-dhar* m., Oṛiyā *udha*, *odha*, *udhuā*, *odhuā* (Turner 1966: 96, No. 2056).

IRANIAN: Avestan *udrō* ‘aquatic animal’, Young Avestan *udra-* ‘(fish) otter’, Ossetic (Iron) *wyrd*, (Digoron) *urdæ* ‘otter’, *Lutra*’ (Abaev 1989: 120).

HELLENIC: Greek *ὕδρος* (*hýdros*) m. ‘water-serpent’, *ὕδρα* (*hýdra*) f. ‘water-serpent’ (Beekes 2010: 1526).

ITALIC: Latin *lutra*⁹ ‘otter’ (de Vaan 2008: 355).

GERMANIC: Old Norse *otr* ‘otter’, Old English *oter* ‘otter’, Middle Low German *otter* ‘otter’, Old High German *ottar* ‘otter’ (Orel 2003: 436), Faroese *otur* ‘otter’, Elfdalian, Ovdalian *uotter*

⁹ It is also worth noting that the initial *l* in the Latin word *lutra* is prothetic. There are various explanations concerning its origin. De Vaan (2008: 355) notes three possibilities. He suggests *l* may have been taken from *lavō* ‘to wash’, from *lupus* ‘wolf’ (which he finds more likely, as both the otter and the wolf are carnivorous) or from *lūdere* ‘to play’ (which he connects to playfulness exhibited by the denoted animal).

‘otter’, Dutch *otter* ‘otter’, Old High German *otter* ‘otter’, German *Otter* ‘otter’ < PGmc. **utra-* (Kroonen 2013: 562).

BALTIC: Lithuanian *ūdra* ‘otter’, Latvian *ūdris* ‘otter’, Old Prussian *wudro* ‘otter’, Balto-Slavic *údra?* ‘otter’ (Derksen 2008: 534, Derksen 2015: 477, Smoczyński 2018: 1554).

SLAVIC: Russian *výdra* ‘otter’, Czech *vydra* ‘otter’, Slovak *vydra* ‘otter’, Polish *wydra* ‘otter’, Serbian / Croatian *vīdra* ‘otter’, Slovene *vīdra* ‘otter’, Bulgarian *vídra* ‘otter’ < PS1. **výdra* ‘otter’ (Derksen 2008: 534, Mańczak 2017: 223).

Outside Indo-European, it is interesting to note that strikingly similar words are attested in the Permic branch of the Uralic family: the Komi language (also known as Zyrian) has the word *vurd* ‘otter’, which is also found in Permyak and in the Komi-Yazva dialect *vurd*; Another Permic language spoken outside of the region and not a member of the Komi pluricentric language is Udmurt, in which there is a similar word for ‘otter’, namely *vudor* (cf. Lytkin, Guljaev 1970: 70). The close resemblance of these lexical items can be explained in terms of borrowing. According to Lytkin and Guljaev (1970: 70), Proto-Permic **wurd* is an Iranian loanword, cf. Osset. (Iron) *wyrd*, (Digoron) *urdæ* ‘otter, *Lutra*’ (Abaev 1989: 120) < Alanic **wurd* < Iranian **udra-* m. ‘otter’, cf. YAv. *udra-* ‘id.’, Pahl. *udrak* ‘otter’.

The material presented above leads to the following conclusions: reconstructing Proto-Indo-European **ud-r-o/eh₂* is supported by the evidence from seven different branches including Indo-Aryan, Iranian, Hellenic, Italic, Germanic, Baltic and Slavic. Some of the languages attest the word in the masculine, others in the feminine; in Greek we can find both genders: *ὔδρος* masculine vs. *ὔδρα* feminine. While some of the oldest cognates preserve the original, structural meaning: ‘aquatic animal’, the cognates attested later usually show the lexicalized meaning ‘otter’, e.g. Avestan *udrō* ‘aquatic animal’, Young Avestan *udra-* ‘(fish) otter’.

4. Morphological analysis

The aim of this section is to explain the morphological structures of the English word *otter* and the Polish word *wydra*, both of which refer to the same animal (*Lutra lutra*) and both are descended from the common ancestral formation. At the stage of Proto-Indo-European, the main difference lies in the gender (and the related stem vowel): in general, the Germanic cognates show the masculine gender and point to PIE **ud-r-o-*, whereas the Slavic exhibit the feminine and indicate PIE **ud-r-eh₂*.

A possible explanation of this difference in gender is that there used to be separate words for the male and female otter. In Latin, there are many such pairs of zoonyms, for example:

(1) <i>agnus</i> 'lamb, male'	<i>agna</i> 'lamb, female'
<i>asinus</i> 'ass, male'	<i>asina</i> 'ass, female'
<i>cervus</i> 'stag'	<i>cerva</i> 'hind'
<i>equus</i> 'horse, male; stallion'	<i>equa</i> 'horse, female; mare'
<i>lupus</i> 'wolf, male'	<i>lupa</i> 'wolf, female'
<i>ursus</i> 'bear, male'	<i>ursa</i> 'bear, female'

Of course, it is not only the animals that represent *substantiva mobilia*. Further examples include *deus* 'god'; *dominus* 'master' vs. *dea* 'goddess', *domina* 'mistress'. What is worth emphasizing is that this class of nouns is different from the category of female nouns, in which there is an additional suffix responsible for deriving female nouns, as in Pol. *wilczyca* 'she-wolf' (derived from *wilk* 'wolf') or English *lioness* (from *lion*).

In the case of *otter*, like in Latin examples above, we do not have any female suffix, it is only the feminine declension which distinguishes it from the masculine. There is a similar case in the Polish *kura* 'hen', which shows the feminine declension, as opposed to *kur* 'rooster', which is declined like masculine nouns.

Apart from the last morpheme, there are two more which are shared by the etyma reconstructable on the basis of the lexical

material presented above. The first **ud-* is the root which can also be found in words for ‘water’:

- (2) Polish *woda* ‘water’ < Proto-Slavic **voda* ‘water’ ← Proto-Indo-European **uód-r-ø* (nom.sg.), **uéd-ŋ-s* (gen.sg.), cf. Hitt. *uātar*, *uītēnaš* ‘water’, cf. Smoczyński (2018: 1602).

This heteroclitic declension is conventionally abbreviated as: **uod-r/n-*, which is also provided by Derksen (2008: 523) and Kroonen (2013: 575–576):

- (3) English *water* < Old English *wæter* (Go. *wato*, gen. *watins* n. ‘id.’, ON *vatn* n. ‘id.’, Far. *vatn* n. ‘id.’, Elfd. *watten* n. ‘id.’, OFri. *weter* n. ‘id.’, OS *watar* n. ‘id.’, Du. *water* n. ‘id.’, OHG *wazzar* n. ‘id.’, G *Wasser* n. ‘id.’) < PGmc. **watar-* ~ **watan-* < PIE **uod-r/n-*.

The root **uod-* is the *o*-grade of the basic form **ued-*. It is interesting to note that Germanic retains other derivatives descended from various apophonetic grades of PIE **ued-*:

- (4) PGmc. **waskan-* ‘to wash’ (OE *wæscan* > E *to wash*, OFri. *waska*, OS *waskan*, Du. *wassen*, OHG *wascan* > G *waschen*) from **uod-ske-*, a *ske*-present (cf. Kroonen 2013: 575).
- (5) PGmc. **wēta-* adj. ‘wet’ (ON *vatr*, OE *wæt* > E *wet*, OFri. *wēt*) from **uēd-o-*, a *vrddhi*-adjective (cf. Kroonen 2013: 583).

In Slavic, there is also the word for ‘bucket’:

- (6) PSl. **vědrō* ‘vessel for water, bucket’ (OCS *vědro* ‘barrel’, Polish *wiadro* ‘bucket’, Russian *vedró*) from **ued-róm*, Derksen (2008: 518–519).

Apart from the root **ued-*, which in the word for ‘otter’ assumed the zero-grade **ud-*, the next morpheme is the PIE suffix **-ro-*. According to Matasović (2014: 103), “This suffix was very productive in PIE in adjectival derivation”. It is worth noting that in Polish adjectives take on different forms depending on the grammatical gender of the denoted noun. In the case of this suffix, masculine forms end with *-ry* (e.g., *mokry* – masc. ‘wet’), feminine forms end with *-ra* (e.g., *mokra* – fem. ‘wet’) and neuter forms end with *-re* (e.g., *mokre* – neu. ‘wet’). Matasović (2014: 103) notes that some of the adjectives created by using the **-ro-* suffix were substantivized (that is, transformed into nouns). To illustrate this process, he mentions the word **vĕra* ‘faith’ (from **weh₁ro* – ‘true’). At the same time, he underlines that the **-ro-* suffix “is also found in nouns, where no PIE adjectival formations can be posited”. Among the examples he mentions “**ydra* ‘otter’”. However, it seems reasonable to argue that *wydra* was formed on the basis of an adjective. As has already been mentioned, *-ra* is a suffix which appears in a number of adjectives (e.g. *chora* – fem. ‘sick’, *modra* – fem. ‘cerulean’). In this context, its presence makes sense when one takes into consideration the history of the word. Since *wydra* clearly derives from the word for ‘water’ and used to refer to a group of aquatic animals in general, it seems possible that literally *wydra* was an adjective formed on the basis of the noun for ‘water’ (its meaning could have been ‘aquatic’). Later, the adjective could start to function as a noun (referring to a number of animal species living in water and then, to one, specific species).

5. Phonological analysis

It becomes apparent that both *otter* and *wydra* come from the same word and that their history (as long as the shift of meaning is concerned) is very similar. However, it is also necessary to explain the sound differences between the two words.

5.1. Sound changes that occurred from Proto-Indo-European to Polish

Let us discuss the sound changes chronologically, starting with Proto-Indo-European **ud-r-eh₂*.

5.1.1. Colouring and lengthening by *h₂*

**eh₂* underwent colouring and lengthening, by which the vowel **e* was modified in character by an adjacent laryngeal. In the case of *h₂*, the preceding **e* was lowered to **a* (cf. Trask 2000: 63).

5.1.2. Winter's Law

The presence of a long vocalism, [y] in Polish *wydra* may seem surprising but, as it has been pointed out by Derksen (2008: 534) and Orel (2003: 436), it can be explained by Winter's law. Winter's law is a law proposed by Werner Winter in 1976. It concerns vowel lengthening in Balto-Slavic. Winter stated that an inherited short vowel stays short "if the syllabic intonation were other than acute, and if the following consonant were other than traditional simple 'media' at the PIE stage". However, if the conditions are different, i.e. if "in acute syllable the vowel preceded a consonant of the sort usually written *d'*", the result would be "a long acute vowel" (Collinge 1985: 225). That is why in Polish word *wydra* short [u] would result in [y] and why this change should also be labelled as a regular shift.

5.1.3. Second delabialization of rounded vowels

According to Shevelov (1964: 376), *ū* regularly changed into *y* in Slavic languages. He states that "This change was carried out not earlier than the eighth century, more likely in the course of the ninth century. It was a common Sl fact by the tenth century" (Shevelov 1964: 380). This pattern can be observed in the following examples, in which the languages on

the left preserve the earlier long vowel \bar{u} , and the Polish cognates (on the right) show the effect of the change (PIE $*\bar{u} >$ Slavic y):

- (7) Old English *mūs* – Polish *mysz* ‘mouse’;
 Old English *tū*, Latin *tū* – Polish *ty* ‘you’;
 Old English *pūsund* – Polish *tyśiac* ‘thousand’;
 Sanskrit *sūnū-*, Lithuanian *sūnus* – Polish *syn* ‘son’;
 Lithuanian *dūmai*, Latin *fūmus* – Polish *dym* ‘smoke’.

5.1.4. Prothesis

Boryś (2005: 717) states that *w* in *wydra* is in fact the prosthetic [v]. Rubach (2009: 73) explains that some of the Slavic languages make use of prosthetic (or prothetic) sounds. He defines them as sounds which appear at the beginning of a word, before vowels, and which were not present in the Proto-Slavic etymon but appeared later, as the language evolved. It might seem that the initial sound in *wydra* has the same source as the initial sound in *woda* and in *water*. Thus, it could be tempting to assume that there is an alternative explanation for the [v] sound in the word *wydra*.

Actually, one of such alternative solutions could emerge after examining the reconstructed forms of this word. As has already been mentioned, Mallory and Adams (1997: 364, 411) suggest $*udrós$ as the PIE form. Other researchers provide similar reconstructed forms, e.g. $*\bar{u}drā$ (Boryś 2005: 717) or $*ud-reh_2$ (Derksen 2008: 534). What these forms share is the first sound: [u]. Even though today [u] is a vowel, there is evidence that in the past the situation could be more complicated. As Meier-Brügger (2003: 85) explains, for the PIE high vowel $*u$, reconstruction provides the non-syllabic equivalent, that is $*\bar{u}$. It is possible that $*u$ and $*\bar{u}$ were two allophones of one phoneme. Hence, it is possible that the first sound of $*udrós$ resembled present-day [w] sound. If that is true, the presence of the [v] sound in the Polish word *wydra* seems to be a result of

a standard process which can be illustrated by a number of examples:

- (8) *wax* [wæks] – *wosk* [vɔsk],
will [wɪl] – *wola* [vɔla],
wolf [wɒlf] – *wilk* [vɪlk],
wind [wɪnd] – *wiatr* [vɪjatr], etc.

However, one should not reject the prosthetic explanation on this basis, as the claim concerning the prosthetic [v] seems well grounded if one takes into consideration apophony. According to Trask (2000: 2), apophony (in other words ‘ablaut’) is “variation in the vowel of a root for grammatical purposes” which appears in IE languages. The author proceeds to explain that “In PIE, a root could appear in any of five forms, with any one of the nuclei /e/, /o/, /ē/, /ō/ or Ø (zero), though few if any roots are attested in all five” (Trask 2000: 2).

As has been stated, both *otter* and *wydra* come from the PIE word for ‘water’, that is **ued-r- / *ued-n-* (Boryś 2005: 706). Thus, the root should be **ued*. If so, **udrós* represents the zero form (**ud̥*) of the root. At this point, [u] precedes a consonant and hence becomes a vowel. In Proto-Slavic, with initial *u* (both long and short), the use of prosthetic *v* is regular, e.g.:

- (9) Common Slavic **ūx-* > **vūx-* ‘louse’ (Polish *wesz*),
Common Slavic **ūz* ‘up’ > **vūz* (Polish *wz-*),
Common Slavic **ūps-* > *vūs-* (Polish *wysoki* ‘high, tall’), etc.
(Shevelov 1964: 235-248).

5.1.5. The remaining sounds

If we ignore slight and insignificant phonetic details, we might conclude that the remaining sounds pertain unchanged. These include the [r] and the voiced dental plosive [d], which were already present in the PIE times and are still present in Polish *wydra*.

5.2. Phonological developments from Proto-Indo-European to English

Let us examine the changes chronologically.

5.2.1. d > t

The first change affected the [d] sound and resulted in [t]. It can be explained by Grimm's law, which describes consonant shifts which occurred as the Proto-Germanic language developed from the Proto-Indo-European language (Noske 2012: 66, Rychło 2014: 200, Rychło 2017). The law states that the PIE sound [d] changed into [t] and that is exactly what can be observed in the described pair of cognates.

5.2.2. o > a

Another change that can be observed is the shift from **utro-* to **utra-*. This process has been described by Ringe (2006: 145-146) as "Mergers of nonhigh back vowels". He states that Germanic languages lost the contrast between vowels [a] and [o]. This resulted in the fact that "The short nonhigh nonfront vowels [...] appear straightforwardly as PGmc *a". He provides a number of examples to support this claim. Among them, one can find:

- (10) PIE **h₂éǵros* 'pasture' > PGmc. **akraz*,
 PIE **h₃ósdos* 'branch' > PGmc. **astaz*,
 PIE **órsos* 'arse' > PGmc. **arsaz*,
 PIE **ǵómb^hos* 'row of teeth' > PGmc. **kambaz* 'comb',

and many more.

5.2.3 u > o

Ringe and Taylor (2014: 27) have explained that the change of **u* into **o* which can be observed in the word *otter* is a regular,

typical change. This process (that is: lowering of **u* to **o*) has affected the Northwest Germanic area. The process took place when the following criteria have been met:

- 1) **u* was stressed,
- 2) “the next syllable contained a nonhigh vowel and no nasal in the syllable coda”,
- 3) **j* did not intervene.

The process, which is sometimes called *a*-umlaut, can also be found in many other English words, among others:

- (11) PGmc **duhtēr* ‘daughter’ > OE *dohtor*,
 PGmc **uhsō* ‘ox’ > OE *oxa*.

5.2.4. Apocope

According to Ringe and Taylor (2014: 44–45), one of the sound changes which affected all West Germanic languages is the loss of **a* and **a* provided that they were unstressed and appeared word-finally or were followed only by **-z*. They state that the described process “affected especially the *a*-stem sg. endings of the direct cases”. Among the examples, they provide is Proto-Germanic **hurną* ‘horn’ which evolved into Old English *horn*.

It seems that as a result of this change **otra-* turned into **otr*.

5.2.5. Epenthesis

Ringe and Taylor (2014: 327) have also explained the changes which affected the final syllable of the analyzed word. According to them, Proto-West Germanic “loss of word-final short low vowels” led to a number of words ending with CR-clusters. Then, “In word-final Cr-clusters a vowel was always inserted”. As an example of words affected by the two processes, the researchers mention *otter*, together with:

- (12) PGmc **murþrą* → OE *morþor* ‘murder’,
 PGmc **timrą* → OE *timber* ‘timber’,
 PNWGMc **hlahtraz* → OE *hleahtr* ‘laughter’ and many
 more (2014: 327–328).

6. Semantic analysis

As Mallory and Adams (1997: 364) point out, usually, smaller animals “are less strongly reconstructed to PIE antiquity than many of the larger mammals”. The word for ‘otter’ seems to be a unique word in this aspect. The authors claim that it can be “the best” in this regard, as **udrós* (common otter) is clearly derived from the word for ‘water’. Also Kroonen (2013: 562) states that “The word is a direct derivation from the IE word for ‘water’”. According to a number of researchers (e.g., Mallory and Adams 1997: 411, Orel 2003: 436), the word used to convey a broader, less specific meaning. It seems that it used to mean ‘aquatic animal’ and included a number of species living in water. Later, the meaning has narrowed. Mallory and Adams (1997: 411) believe that the specialization could occur even in the PIE times.

Boryś (2005: 717) states that the Polish word *wydra* comes from the Proto-Slavic word **vydra* which in turn evolved from the word **ūdrā*. He explains that the name comes from the PIE word for ‘water’ and that in the PIE times, the word referred to animals living in a water environment in general but later, in the Slavic and Baltic languages its meaning narrowed to one species of these animals, i.e. to the otter. In fact, it is not only Slavic and Baltic, which show the narrowing of the meaning, as we have demonstrated in Section 3.

A similar semantic development must have occurred in the Polish word *ziemniak* ‘potato’, which is derived from the adjective *ziemny* ‘relating to earth’, which in turn is derived from *ziemia* ‘earth’.¹⁰ As in the case of the otter, the name of the

¹⁰ Boryś (2005: 740) interprets Polish *ziemniak* as a calque from German *Erdapfel*. However, only the first element could have undergone the process of loan translation. The structure of the word resembles other de-adjectival

environment (in which the animal lives or the plant grows) was used to denote the name of the species.

7. Conclusions

There is no doubt that Polish *wydra* and English *otter* represent cognates even though they cannot be brought back to identical proto-forms. The Germanic languages clearly indicate the masculine gender descended from Proto-Indo-European *o*-stem, while the Slavic cognates represent the feminine gender pointing to Proto-Indo-European *eh₂*-stem (later *ā*-stem). This discrepancy in gender must be very old since we can find other Indo-European branches supporting masculine, feminine or both, as was shown in Section 3. Etymologically, the words for ‘otter’ investigated in the present paper represent a substantivized adjective **ud-r-o-* meaning ‘aquatic’. Its root exhibited the zero-grade form of PIE **uod-r/n-* ‘water’, the *-r-* suffix used to perform the adjectival function (as is still found in Polish *dobry* ‘good’, *chory* ‘ill’, *stary* ‘old’, *szczerzy* ‘frank’ etc.).

Table 1
Summary

The Germanic line (leading from PIE to present-day English)		The Slavic line (leading from PIE to present-day Polish)	
<i>*ud-r-o-</i>		<i>*ud-r-eh₂</i>	
<i>*utro-</i>	<i>d > t</i> (Grimm’s law)	<i>*udrā</i>	Colouring and lengthening by <i>h₂</i>
<i>*utra-</i>	Merger of nonhigh back vowels	<i>*ūdrā</i>	Winter’s law

nouns which were derived from nouns (first with the suffix *-ny* and then *-ak*): e.g. *kapuśniak* ‘cabbage soup’, *żołędniak* ‘hog fed with acorns’, *wieśniak* ‘vil-lager’ (note the adjectives *kapustny* ‘related to cabbage’ [Linde 1808: 957], *żołędny* ‘related to acorns’ [Linde 1814: 1000], *wieśny* ‘rural, rustic’ [Linde 1814: 225] recorded in Linde).

*otra-	<i>a</i> -umlaut	*ydra	Second delabialization of rounded vowels * <i>ū</i> > PSl. * <i>y</i>
otr	apocope (loss of word-final short low vowel)	wydra	prosthetic <i>v</i>
otter	epenthesis (insertion of a vowel in word-final Cr-clusters)		

The analysis leads to the conclusion that in Proto-Indo-European there must have been distinct masculine and feminine forms for at least this zoonym. As the examples in (1) suggest, there may have been more such names of animals, which should be the subject of future research.

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Taboo zoonyms: What do *bear*, *lynx* and *wolf* have in common?

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Abstract

The aim of this paper is to trace the etymologies of the English words *bear*, *lynx* and *wolf* and their Polish equivalents *niedźwiedź*, *ryś* and *wilk* within the context of Indo-European languages in terms of the mechanisms for creating euphemisms to denote animals subject to the phenomenon of linguistic tabooization. The methodology comprises the following stages: selection of cognates (to determine the scope of attestation); examination of the semantic features of the selected vocabulary; and an attempt to outline the problem of the functional features of euphemisms to denote tabooed vocabulary. The results of these considerations can contribute to concretising our ideas about the linguistic constitution of the surrounding world by past language users and linguistic interrelationships, as well as help reveal the peculiarities of euphemistic vocabulary conditioned by the functioning of linguistic taboos.

Keywords

etymology, Proto-Indo-European (PIE), zoonyms, taboo, euphemisms

Zoonimy objęte tabu: Co łączy *niedźwiedzia, rysia i wilka?*

Abstrakt

Celem artykułu jest prześledzenie etymologii angielskich słów *bear*, *lynx* i *wolf* oraz ich polskich ekwiwalentów *niedźwiedź*, *ryś* i *wilk* w kontekście języków indoeuropejskich pod kątem mechanizmów tworzenia eufemizmów na określenie zwierząt objętych zjawiskiem tabuizacji / eufemizacji językowej. Metodologia obejmuje: zebranie wyrazów pokrewnych (dla określenia zakresu poświadczenia); zbadanie cech semantycznych wybranego słownictwa; oraz próbę nakreślenia problemu cech funkcjonalnych eufemizmów na oznaczenie słownictwa tabuizowanego. Wyniki tych rozważań mogą przyczynić się do konkretyzacji naszych wyobrażeń na temat językowego konstytuowania otaczającego świata przez dawnych użytkowników języka oraz wzajemnych powiązań językowych, a także pozwalają ukazać specyfikę słownictwa eufemistycznego uwarunkowanego funkcjonowaniem tabu językowego.

Słowa kluczowe

etymologia, praindoeuropejski, zoonimy, tabu, eufemizmy

1. Introduction

The article focuses on the etymologies of vocabulary items denoting selected primal forest predators, known in the European culture since ancient times – English *bear*, *lynx*, *wolf*, and their Polish equivalents *niedźwiedź*, *ryś* and *wilk*. Over the centuries, the original zoonyms were replaced by new names with different semantic features, superseding their ancient predecessors. The goal is to examine what kind of terms supplanted these lexical items and try to answer the question of why this might have happened, or, as the title suggests, what these animals have in common. Section 2 focuses on presenting the problem of lin-

guistic tabooization and euphemization. Section 3 focuses on the methodology of this research. Section 4 (divided into three subsections) presents the linguistic evidence and briefly investigates the scope of attestation of selected items of vocabulary with their cognates. In Section 5, the semantic features of selected items of vocabulary are examined, and an attempt is made to outline the problem of functional features of euphemisms denoting tabooed vocabulary for these specific examples. Section 6 presents the results of these considerations, which may contribute to concretising the ideas about the linguistic constitution of the surrounding world by past language users and linguistic interrelationships, as well as revealing the specificity of euphemistic vocabulary conditioned by the functioning of linguistic taboos.

2. Linguistic tabooization and euphemization

Language reflects social values of its users (Smith 2010; Kennedy et al. 2021). Taboos have long occupied a peripheral place in linguistic research due to their inherent linguistic complexity (Pedraza 2018). Recently, however, there has been increasing interest in revisiting this issue, especially from a cognitive and sociolinguistic perspective. Still, little space has been devoted to it in historical linguistics.

Language taboos contain a strong cultural component that represents specific customs and perspectives of language users on their society (Fromkin et al. 2014). They occur when language users avoid talking about certain phenomena (Crystal 1995); some issues are not mentioned at all for fear of bad fate or summoning evil; or, omitted elements are replaced with other words, circumlocutions or euphemisms (Monaghan et al. 2012). Fromkin and Rodman (1993) posit that a euphemism is a word or phrase that replaces a taboo word or helps avoid an unpleasant topic. Hughes (2006: 463) describes the relationship between taboo and euphemism as “symbiotic”. In this symbiosis, the negative power of the taboo and the social risk associated with it interact with the desirability of euphemism as a way to

avoid this risk. Hughes (2006: 151) defines euphemism as “deliberately indirect, conventionally imprecise, or socially ‘comfortable’ ways of referring to taboo, embarrassing, or unpleasant topics”.

The same type of symbiotic and compensatory relationship is considered by Jing-Schmidt (2007) as key to explaining the negative bias in human cognition and the Pollyanna effect, i.e. the preference for positive qualifiers in language use, observed in Boucher and Osgood (1969). Jing-Schmidt maintains that awareness of verbal risk itself shapes language users’ verbal choices, and the Pollyanna effect is not so much inspired by optimism as motivated by the need to manage such risk.

Euphemisms can be classified according to the semantic fields to which they refer. Rawson (1981: 1) proposes his own classification of euphemisms into positive and negative. Positives inflate and magnify, making euphemized elements seem greater and more important than they really are. Negative euphemisms weaken and deflate; they are defensive in nature, balancing the power of taboo terms and otherwise removing from the language anything that people prefer not to come into direct contact with.

Taboo, in its broadest generalization, refers to things, people, actions and behaviours that should not be touched, performed, interacted with, talked about or undertaken, so that they do not cause harm to the perpetrator or to society as a whole (Allan and Burridge 2006: 3–4). That includes prohibitions against naming dangerous animals (Burridge 2006b). Taboos regarding animal names are common and reflect the animistic past of human societies (Jing-Schmidt 2019). Frazer (1911: 190) refers to “savage” hunters and fishermen who concealed the names of animals they intended to kill. This coincides with the taboo on animal names in various societies (Emeneau 1948; Patyal 1980; Smal-Stocki 1950). While Frazer sees the repression of animal names as a “hunters’ taboo”, Emeneau points to religious and mythical motivations as part of ancient animism combined with word magic, of which abundant evidence exists in various lan-

guages (Ogden and Richards 1927; Izutsu 1956; Tornaghi 2010).

The sense of fear probably played a key role in coining the words for these rather terrifying animals. Perhaps that is why the etymologies of words for selected predators of the primeval forest, known in the European culture since ancient times – English *bear*, *lynx*, *wolf* and Polish *niedźwiedź*, *ryś* and *wilk* – are so intriguing, particularly when taking into account the specific tabooization and euphemization of their original meanings.

3. Methodology of research

The research methodology was inspired by the research on cognates, specifically Rychło (2019), as illustrated in several case studies (Rychło 2012, 2013, 2014b, 2017, 2018, 2021; Rychło and Witczak 2021). This methodology is mainly based on comparative analysis and includes an assessment of the time (stage 1) and scope (stage 2) of attestation, as well as a morphological (stage 3) and phonological (stage 4) analysis. In works on cognates, it is conventional to compare groups of words in depth; therefore, due to the range of linguistic material covered here, the full scope of this approach has been somewhat limited. Consequently, the methodology used in the present work primarily considers the semantic links between the words under study (Rychło 2016).

This article traces six vocabulary items denoting selected primal forest predators (English *bear*, *lynx*, *wolf*, and Polish *niedźwiedź*, *ryś* and *wilk*), in terms of semantics and etymology. The intention is not to analyse them exhaustively or to rewrite dictionaries. Previous research was reviewed, i.e. Abaev, Beekes, Derksen, Kroonen, Linde, Mallory and Evans, Matasović, Piwowarczyk, Smoczyński, de Vaan (including earlier work, such as Pokorny, Shevelov, Urbańczyk).

The methodology of cognitive linguistics is used, as a contemporary school of linguistic practice and thinking, dealing with the study of significant correlations between human language, mind and socio-physical knowledge (Evans et al. 2007: 2–36),

a field related to sociolinguistics, examining semantics and the study of metaphors and metonymy, and in the case of analysed material – euphemisms and taboos.

4. Linguistic evidence

4.1. English *bear* and Polish *niedźwiedź*

According to Piwowarczyk (2022: 58), the most primordial word root for ‘bear’, reconstructed from Proto-Indo-European (PIE), is **h₂rtkō-*, and can be found in eight groups of Indo-European languages: Anatolian, Indian, Iranian, Greek, Armenian, Italian, Celtic, Albanian. To give a few examples, Hittite *ḫartaggaš* ‘bear’, Sanskrit *ṛkṣaḥ* ‘bear’, Avest. *aršo* ‘bear’, Greek *ἄρκτος* (*árktos*) ‘bear’, Latin *ursus* ‘bear’, Old Armenian *արջ* (*arj*) ‘bear’, and Albanian *ari* ‘bear’, all retain the PIE root evident today in the word *Arctic* (the land of bears). Remnants of this PIE root can be seen in Old Irish *art*, Welsh *art*, Breton *arzh*, (‘bear’, ‘hero’, ‘warrior’) which resounds in the English name *Arthur*.

Noticeably, this PIE root is not attested in the Balto-Slavic or Germanic groups. The English word ‘bear’ descends from the Proto-Germanic [PGmc] root **berō* ‘bear’ (cf. Old English [OE] *bera* ‘bear’, Old High German [OHG] *bero* ‘bear’, Middle High German [MHG] *ber* ‘bear’, German *Bär* ‘bear’). The Germanic base is of uncertain and disputed origin, but is usually said to reflect the PIE root **b^her-* ‘brown’; (cf. Ringe 2017: 106), thus originally meaning literally ‘the brown one’. As far as the Polish word *niedźwiedź* is concerned, it descends from the Proto-Slavic [PSl] **medvĕdъ* (descendant of the Proto-Balto-Slavic [PBSl] **medwĕ⁷dis*), a historical compound of **medъ* ‘honey’ + **(j)ĕsti* ‘to eat’, hence literally the epithet ‘honey-eater’. Cognates include, among others, Old Church Slavonic [OCS] *медвѣдъ* (*medvĕdъ*), Old Polish *miedźwiedź*, and even Sanskrit *madhvād* ‘honey-eater’ (cf. Borys 2005: 360; Derksen 2008: 306; Olander 2001: PR 132).

Since there are primary (unmotivated) words in the ancient Indo-European languages that occur in many related lan-

guages, while they are absent in the Balto-Slavic and Germanic groups, there is an assumption that there must have been a kind of displacement or replacement by descriptive compounds. Slavic languages certainly had a form inherited from **h₂rtkōs* but at some point, before it reached the written form, language users must have decided that the word was better left unsaid. Which may mean that other names were used to describe this type of animal in these language groups, giving rise to the assumption of a likely taboo distortion (cf. Derksen 2008: 306; Mallory and Adams 1997: 55; de Vaan 2008: 645).

It may have been the case that the “original” PIE word **h₂rtkōs* ‘bear’ was also a euphemism, since it contains guttural sounds, a possible onomatopoeic substitute (meaning ‘the roaring one’), because of a belief that saying the name might summon the animal.

4.2. *Lynx* and *ryś*

The name originated in Middle English [ME] (*lynx*, *linx*, *lenx*, *lynce*) via Latin *lynx* ‘lynx’, from Greek word *λύγξ* (*lúnx*) ‘lynx’, derived from the Indo-European root **leuk-* denoting ‘light’, ‘brightness’, in reference to the luminescence of this animal’s gleaming eyes or its ability to see in the dark (Beekes 2010: 875; Mallory and Adams 1997: 359).

Cognates include, e.g. Lithuanian *lūšis* ‘lynx’, OHG *luhs* ‘lynx’, German *luchs* ‘lynx’, OE *lox* ‘lynx’, Russian *рысь* (*rys*) ‘lynx’. In the Slavic group, inherited from Proto-Slavic **rǫsь*, from **lǫsь*, where the initial *l-* was replaced by *r-*, probably under the influence of another word, **rysь* ‘reddish’ (Beekes 2010: 875), perhaps due to hunters’ taboo, cf. Polish *rysawy*, *rudawy*, *rdzawy*, *ryży* (Boryś 2005: 530).

The ME word *lynx/linx* was the Latin borrowing that replaced earlier OE cognate word *lox* (<PGmc **luhsaz*), attested for example in Ælfred’s *Beothius: Aristoteles sǣde ðæt deór wǣere ðæt mihte ǣlc wuht þurhseón ge treówa ge furþum stánas; ðæt deór wé hátaþ lox* (Bosworth 1882: 647).

4.3. *Wolf and wilk*

The semantic unit ‘wolf’ is represented in several lexemes in Indo-European. Inherited from Balto-Slavic [BSI] **wilkós*, from PIE **ulkw-o-s* (Derksen 2008: 536; de Vaan 2008: 688), with cognates that include PSI **v̅lkw̅* (*vũlkũ*) ‘wolf’, Polish *wilk* ‘wolf’, Russian *волк* (*volk*) ‘wolf’, OCS *v̅lkw̅* (*vliku*) ‘wolf’, Czech *vlk* ‘wolf’, Greek *λύκος* (*lýkos*) ‘wolf’; with OHG *wolf* ‘wolf’, OE *wulf* ‘*wolf*’, originating from PGmc **wulfaz*. The sound variation in the English *wolf* and Polish *wilk* is explained by Rychło (2014a).

Given the earlier derivation being Latin *lupus* ‘wolf’, de Vaan (2008: 353) suggests that a semantic shift from *volpes* ‘fox’ to *lupus* ‘wolf’ may have been due to a tabooistic replacement of an earlier unattested word for ‘wolf’. As far as the original meaning is concerned, there are several hypotheses, two most notable ones denoting ‘the dangerous one’ or ‘the one who tears, lacerates’ (Mallory and Adams 1997: 645).

5. Semantic and functional features

It is evident that original terms for ‘bear’, ‘lynx’ and ‘wolf’ were customarily replaced by euphemisms, which most probably arose through taboo avoidance (reflecting the danger posed by the animal) or tabooistic replacement or displacement. It was most probably due to these animals being associated with evil or bad fate, for fear of summoning them (Crystal 1995). The circumlocutions or euphemisms were created (Monaghan et al. 2012) to avoid the unpleasant topic (Fromkin and Rodman 1993). Euphemisms, deliberately indirect and conventionally imprecise, helped early societies avoid these threats (Hughes 2006: 151). Thus, ‘bear’ was named ‘the brown one’; the word for ‘lynx’ can be etymologized as ‘the one with bright eyes’; and the structural meaning of ‘wolf’ can be described as ‘the dangerous one’ or ‘the one who tears, lacerates’. It can be assumed that there was a compensatory relationship explaining the negative attitude, motivated by the need to manage the risks associated with these dangerous creatures (Jing-Schmidt 2007). According

to Rawson's (1981) classification, it can be assumed that all these euphemisms were negative and defensive in nature, and their purpose was to weaken and reduce the risk posed by these animals. Tabooization can be explained by the animistic past of human societies and hunters' taboo (Frazer 1911: 190), which can also be linked to religious and mythical motivations within ancient animism combined with word magic (Emeneau 1948). The fact that in Indo-European languages there are several words for 'bear', 'lynx' and 'wolf' proves that these animals were widespread throughout the Indo-European territory and had cult and ritual significance, which is confirmed by the oldest Indo-European traditions.

The words in question are believed to have been ritually replaced in the Balto-Slavic and Germanic branches of the Indo-European languages because of the hunters' taboo on the names of wild animals; *cf.* other descriptive names for 'bear': Irish *mathúin* 'the good calf', Welsh *mochyn mel* 'the honey-pig', Lithuanian *lokỹs* 'the licker', Russian *медведь* (*medvéd'*) 'the honey-eater'. In this way, they were euphemistically replaced due to the taboo and its cultic meaning. In both Slavic and Germanic language groups, the original words were replaced by descriptive terms based on the characteristic features of the animals. The reason for this replacement, which mainly took place in the Balto-Slavic-Germanic area, may have been the greater cult importance of these animals in this region, compared to the areas occupied by people speaking the languages of other Indo-European groups.

The sense of fear also could have played a key role in coining the words for these rather terrifying animals. Early Indo-Europeans generally tabooed the region's most important predator, bears in northern Europe and wolves further south.

6. Conclusions

It has been suggested that Germanic and Balto-Slavic populations may have shared an Indo-European background with strong non-Indo-European influences (Kortlandt 2016). This is

confirmed by folk tales shared between East Baltic peoples on both sides of the Baltic Sea, as well as between East European cultures, indicating a very strong interaction between Germanic and Balto-Slavic populations (Bortolini et al. 2017). Cultural traits and similarities may have been acquired as a result of intensive contact between Germanic peoples from Scandinavia and Proto-Slavic peoples from Central and Eastern Europe across the North European Plain and the Baltic Sea. The reconstructed lexis confirms evidence of contact between Germanic and Baltic languages in the same regions, and the tendency to call predators euphemistically also represents some common cultural features, reflecting a similar mentality and cognitive strategies.

The fact that certain language groups treated the vocabulary associated with forest predators in a euphemistic manner is certainly no coincidence. The specificity of the euphemistic vocabulary conditioned by the functioning of a linguistic taboo on dangerous forest-dwellers such as the ‘bear’, ‘lynx’ and ‘wolf’ certainly confirms the hunters’ taboo, but it also provides an insight into the interlingual connections and approaches to the linguistic constitution of the surrounding world by past language speakers.

An interesting observation may be that the descriptive compound for ‘bear’ can be found as early as Sanskrit: *madhvád* ‘honey-eater’. Thus, euphemistic circumlocutions already existed in the ancient language, which may suggest that this is not entirely a solution of Germanic and Balto-Slavic language groups alone. However, there has certainly been a loss and/or elimination of the original term inherited from PIE **h₂rtkos* in these two groups.

The present study is confined only to a selection of vocabulary items and a non-exhaustive analysis, which is its limitation. More in-depth research is needed to examine other taboo words in order to draw more structured conclusions. Consequently, this creates great potential for further research in this area.

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**“Three Quarks for Muster Mark!”
A Slavic gloss to Joyce’s
*Finnegans Wake***

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Abstract

The unclear verse “Three Quarks for Muster Mark!”, introduced by James Joyce (1882–1941) to his novel entitled *Finnegans Wake* (first published in 1939), was a literary source for the English word *quark* denoting ‘an elementary particle with a fractional electric charge that is part of a proton, neutron or other interacting elementary particle’. The American physicist Murray Gell-Mann, winner of the Nobel Prize in Physics in 1969, was the first researcher to introduce the English word *quark* into scientific terminology as early as in 1964. After accepting his hypothesis of quarks in the world science, most physicists adopted the English term *quark* as standard in the physical terminology of most international languages (e.g. French *quark*, German *Quark*, Italian *quark*, Polish *kwark*, Portugal *quark*, Russian *кварк*, Spanish *cuark*, Turkish *kuark*, Ukrainian *кварк* ‘an elementary particle’) and it quickly became a widely recognized internationalism. It is not commonly known that Joyce’s verse facetiously imitated loud cries of German dairy women: *Drei Mark für muster Quark!* (literally “Three Marks for an excellent curd!”). In other words, E. *quark* ‘an elementary particle’ is motivated by the German term *Quark* m. ‘weiser Käse / curd,

white cheese', metaphorically 'trifle, nonsense, trash, worthless thing', which – according to most German and Slavic etymologists – represents an obvious Slavic borrowing (especially a Polish or Lower Sorbian loanword), cf. Pol. *twaróg*, dial. *kwaruk* m. 'curd, white cheese' (< Proto-Slavic **tvarogъ* m. 'id.'). It is suggested that the specialized term *kwark* represents the so called back-borrowing in the Polish language.

Keywords

elementary particles, internationalisms, James Joyce, language contacts, lexical loanwords, Murray Gell-Mann, Polish back-borrowings, quark

„Three Quarks for Muster Mark!”

Słowiańska glosa do

***Finneganów trenu* Joyce'a**

Abstrakt

Niejasny wers “Three Quarks for Muster Mark!”, użyty przez Jamesa Joyce’a (1882–1941) w jego powieści zatytułowanej *Finneganów tren* (opublikowanej po raz pierwszy w 1939 roku), był literackim źródłem angielskiego słowa *quark* oznaczającego ‘elementarną cząstkę o ułamkowym ładunku elektrycznym, która wchodzi w skład protonu, neutronu lub innej oddziałującej cząstki elementarnej’. Pierwszym badaczem, który wprowadził angielskie słowo *quark* do terminologii naukowej już w 1964 roku, był amerykański fizyk Murray Gell-Mann, laureat nagrody Nobla w dziedzinie fizyki w 1969 roku. Po zaakceptowaniu jego hipotezy o kwarkach w światowej nauce, większość fizyków przyjęła angielski termin *quark* jako standardowy w terminologii fizycznej większości języków międzynarodowych (np. fr. *quark*, niem. *Quark*, wł. *quark*, pol. *kwark*, port. *quark*, ros. *кварк*, hiszp. *cuark*, tur. *kuark*, ukr. *кварк* ‘cząstka elementarna’) i szybko stała się powszechnie rozpoznawalnym internacjonalizmem. Mało kto wie, że wers Joyce’a w żartobliwy sposób naśladował głośne krzyki niemieckich handlarek

nabiału: *Drei Mark für muster Quark!* (dosłownie „Trzy marki za doskonały twaróg!”). Innymi słowy, angielski leksem *quark* ‘cząstka elementarna’ jest motywowany przez niemiecki termin *Quark* m. ‘twaróg, biały ser’, metaforycznie ‘błahostka, bzdura, śmieć, rzecz bezwartościowa’, który – zdaniem większości niemieckich i słowiańskich etymologów – stanowi oczywiste zapożyczenie słowiańskie (zwłaszcza polskie lub dolnołużyckie), por. pol. *twaróg*, dial. *kwaruk* m. ‘twaróg, biały ser’ (< psł. **twarogъ* m. ‘id.’). W artykule pada sugestia, że specjalistyczny termin *kwark* reprezentuje w polszczyźnie tak zwane zapożyczenie zwrotne

Słowa kluczowe

cząstki elementarne, internacjonalizmy, James Joyce, kontakty językowe, pożyczki leksykalne, Murray Gell-Mann, polskie zapożyczenia zwrotne, kwark

1. Introduction

The Polish word *kwark* means ‘an elementary particle with a fractional electric charge that is part of a proton, neutron or other interacting elementary particle (hadron) / elementarna cząstka o ułamkowym ładunku elektrycznym, która wchodzi w skład protonu, neutronu lub innej oddziałującej cząstki elementarnej (hadronu)’, metaphorically ‘a kind of fundamental building block of the universe / rodzaj podstawowej cegielki budowy wszechświata’ (Kopaliński 1989: 289) and represents a typical internationalism, the ultimate source of which is the English term *quark* ‘an elementary particle (in physics)’ (Szymczak 2001: 1028; Sobol 2002: 628; Burzyński, Paprocka, Popławska 2015: 228). The English lexeme, as well as the Polish one, appeared together with the dissemination in the scientific world of the quark hypothesis (theory) at the end of the 20th century AD.

The English word *quark* was introduced into scientific terminology in 1964 by the American physicist Murray Gell-Mann,

winner of the Nobel Prize in Physics in 1969. He did not invent this appellative himself, but he took it from James Joyce's novel entitled *Finnegans Wake* published in 1939 (Kopaliński 1989: 289; Gell-Mann 1994: 180; Sobol 2002: 628). The following words appear in this seminal novel (Joyce 1992: 383):

Three quarks for Muster Mark!¹¹
 Sure he hasn't got much of a bark
 And sure any he has it's all beside the mark.

Murray Gell-Mann, one of the founders of the theory of quarks, looking for a new term for the three elementary particles he postulated, simply used Joyce's "vague" words *three quarks*, as he himself announced in his memoirs (Gell-Mann 1994: 180).

"In 1963, when I assigned the name "quark" to the fundamental constituents of the nucleon, I had the sound first, without spelling, which could have been "kwork." Then, in one of my occasional perusals of *Finnegans Wake*, by James Joyce, I came across the word "quark" in the phrase "Three quarks for Muster Mark." Since "quark" (meaning, for one thing, the cry of a gull) was clearly intended to rhyme with "Mark," as well as "bark" and other such words, I had to find an excuse to pronounce it as "kwork." But the book represents the dream of a publican named Humphrey Chimpden Earwicker."

It is widely believed that in creating his unusual, expressive speech *Three quarks for Muster Mark!* James Joyce parodied the cries of German dairy women: *Drei Mark für muster Quark!* (literally "Three Marks for an excellent curd!"), which he once heard at the market in Freiburg. Jan Miodek, an eminent Polish philologist, explains the use of the *quark* in James Joyce's novel as follows:

¹¹ It should be emphasized that Władysław Kopaliński (1989: 289–290) quotes this passage in a different, slightly corrected form *Three quarks for Mister Mark*. Miodek (1992: 75) also acts in the same way.

“Badacze literatury zachodzili w głowę [...], skąd się wziął ten wyraz w przytoczonym wypowiedzeniu (najczęściej traktowano go jako słowo symbol, oznaczające trójkę biesów, występujących w powieści). Wreszcie ktoś odkrył, że Joyce zabawiał się w grę słów. Będąc kiedyś w jakimś mieście niemieckim, usłyszał na targu wołanie przekupki: «*Drei Mark fuer Muster Quark!*» (*trzy marki za idealny, pokazowy twaróg!*). Wprowadzając trawestację tej konstrukcji do swego dzieła, na pewno nie przypuszczał, że słowiański z pochodzenia *quark* (*kwark*) zrobi karierę w języku ... fizyków” (Miodek 1992: 75–76).

“The scholars engaged in literary studies wondered [...], where the word in the quoted expression came from (most often it was treated as a word symbol denoting the three fiends appearing in the novel). Finally, someone discovered that Joyce had played a word game. Once, while in a German town, he heard a street vendor «*Drei Mark für Muster Quark!*» (three marks for an excellent, admirable curd!). Introducing a travesty of this construction into his work, Joyce certainly did not expect the word *quark* (*kwark*) of Slavic origin would make a career in the language of ... physicists“

These unusual *three quarks*, used by James Joyce (1882–1941) in his highly controversial novel, persuaded the American physicist Murray Gell-Mann to relate these “unknown” three quarks to three hypothetically postulated (yet unidentified) elementary particles, whose existence was presumed on the basis of theoretical considerations. The real nature of such particles, henceforth commonly referred to as quarks, was confirmed only by experiments carried out in 1969 in one of the specialized laboratories in Los Angeles.

If the source of the English term *quark* ‘elementary particle’ (hence Pol. *kwark* and G. *Quark* are adopted) was the German lexeme *Quark* m. ‘weiser Käse / curd, white cheese’, metaphorically ‘trifle, nonsense, trash, worthless thing’, then let us try to trace its further origin. This German appellative appears in written sources starting from the 14th century AD, initially in various Middle High German records such as *twarç*, *zwarg*, *quarc*. However, it is not a native word in (Middle High) German, but an old (mediaeval) borrowing from some West Slavic source.

It is now assumed that MHG. *twarc* (from which later MHG. *quarc* and G. *Quark* ‘curd, white cheese’) originates either from the Old Polish language (cf. Pol. *twaróg*, dial. *kwaruk*)¹² or from Lusatian (cf. LSorb. *twarog*).¹³ The influence of Czech, Slovak and High Sorbian (cf. Cz. *tvaroh* ‘curd’) into German is excluded for phonological reasons, as these West Slavic languages changed the Proto-Slavic phoneme **g* in *h* (in Czech, Slovak and High Sorbian). On the other hand, the lexical influence of the Polabian language on Middle High German must also be abandoned for geographical reasons.

If we assume that MHG. *quark* was borrowed directly from the Old Polish language, then the observed cycle of dependencies allows us to include the Polish word *kwark* among typical back-borrowings:¹⁴ Pol. *kwark* ← E. *quark* ← G. *Quark* < MHG. *quarc*, *twarc*, *zwarg* ← OPol. *twarog*.

If we assume another possibility according to which the (Middle High) German population borrowed the word *quark* (hence G. *Quark*) from speakers of the Lower Sorbian language, then the hypothesis of back-borrowing can also be defended, because Pol. *twaróg* derives ultimately from Proto-Slavic **tvarogъ*. Let us remember that the Proto-Slavic language (or even its later form – the language of the Lechitian Slavs) represents an earlier

¹² Brückner (1985: 586) proves that “the Germans borrowed this word from the Poles: G. *Quark* [...], dial. *Dwarg* in Prussia” (“Niemcy pożyczili to od nas: *Quark* [...], narzeczowe pruskie *Dwarg*”). Other researchers think much the same (Westfal 1956: 154; Miodek 1992: 75; Mackensen 1998: 356; Mańczak 2017: 206; Witczak 2021: 218–220). A cautious position is taken by Wasserzieher (1979: 181), who allows a borrowing from Polish or Lusatian. Miodek (1992: 75) gave three examples of Polish borrowings in German as highly probable: G. *Grenze* ‘border’ ← Pol. *granica*, G. *Peitzker* ‘wheatherfish’, *Misgurnus fossilis* L.’ ← Pol. *piskorz*, G. *Quark* ‘cottage cheese’ ← Pol. *twaróg*.

¹³ Some German researchers seem to support the Lower Sorbian source of borrowing (Mackensen 1988: 304; Kluge, Seebold 1999: 659). It should be emphasized, however, that the alternative variant *kwaruk* [kfarúk] ‘quark, curd cheese’, attested in Polish dialects, better explains G. *Quark* from a phonological point of view.

¹⁴ The linguistic term *back-borrowings* (or *reverse borrowings*, sometimes also *reborrowings*) defines words loaned to another language, and then borrowed back from that language (or by a mediation) in a different form and often with a different meaning. In his essay entitled *O twarogu i kwarku* (On the curd and the quark) Miodek (1992: 74–76) does not use the term “back-borrowing”, although in fact he discusses a lexical borrowing of this kind.

phase of the development of the Proto-Polish language. In this case, too, we can talk about back-borrowing, although we will reconstruct the cycle of interlingual interactions in a different way: Pol. *kwark* ← E. *quark* ← G. *Quark* < MHG. *quarc*, *twarc*, *zwarg* ← LSorb. *tvarog* < Lechitian Slavic **tvarogъ* 'curd, white cheese' < PSl. **tvarogъ* 'id.'

The Polish lexeme *twaróg* m. 'milk product, from which cheese is made' (attested from the 15th century AD) continues the Proto-Slavic archetype **tvarogъ*, which was formed from the lengthened variant of the verb **tvoriti* 'to create' by means of the suffix **-ogъ* (Boryś 2005: 656), cf. Pol. *pieróg* m. 'a filled dumpling' < PSl. **pirogъ*. It seems to be a typically Proto-Slavic formation, though its close counterparts, built on the different apophonic degree, can be seen in other Indo-European languages, cf. Avestan *tūri-* n. 'sour milk, whey' (Bartholomae 1904: 655; Pokorny 1959: 1083), Middle Indo-Aryan *tūra-* 'cheese', Myc. Gk. *tu-ro₂* '(white) cheese', Anc. Gk. *ὑρός* m. 'cheese, fresh cheese, cottage cheese' (Aura Jorro 1993: 379; Beekes 2010: 1520).

We treat the Polish word *kwark* m. 'an elementary particle' as a back-borrowing, because Proto-Slavic and Common West Slavic, as well as Lechitian Slavic and Old Polish, represent distant development phases of the Polish language.

3. Conclusions

The word *quark* 'elementary particle' represents an internationalism, introduced to the world of science by the American physicist Murray Gell-Mann. It owes its origin to the mysterious phrase *three quarks*, which in Joyce's novel entitled *Finnegans Wake* allegedly mimicked the screams of the female dairy traders praising freshly prepared curd in the German speech (cf. G. *Quark* 'curd, cottage cheese'). The present author agrees with the opinion that the German word *Quark* was taken from over from a Polish source (cf. Pol. *twaróg*, dial. *kwaruk* 'white cheese'), finally coming to the conclusion that the Polish scientific term *kwark* 'elementary particle' should be regarded

a back-borrowing that has returned to the Polish language via English.

Abbreviations

Anc. Gk. – Ancient Greek; Cz. – Czech; dial. – dialectal; E. – English; G. – German; Gk. – Greek; LSorb. – Lower Sorbian; m. – masculine; MHG. – Middle High German; Myc. Gk. – Mycenaean Greek; OPol. – Old Polish; Pol. – Polish; PSl. – Proto-Slavic.

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