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THE INTERACTION OF NOMINALISATION AND COMPOUNDING IN POLISH: ON THE ANALYSIS OF *LISTONOSZ* 'MAIL CARRIER' AND *KORKOCIĄG* 'CORKSCREW' IN CONSTRUCTION MORPHOLOGY

1. INTRODUCTION

The aim of this paper is to search for the most appropriate analysis of so-called "interfixal-paradigmatic formations" in Polish (Grzegorczykowa and Puzynina; Szy-manek, *A Panorama*), as exemplified in (1–4), where LV stands for a linking vowel.¹

- (1) *list-o-nosz* (letter+LV+carry) 'mail carrier' (cf. *nosić* 'carry',² verb stem *nos-/nosz-*)
- (2) kork-o-ciąg (cork+LV+pull) 'corkscrew' (cf. ciągnąć 'pull', verb stem ciąg-)
- (3) ręk-o-pis (hand+Lv+write) 'manuscript' (cf. pisać 'write', verb stem pis-/pisz-)
- (4) *śrub-o-kręt* (screw+LV+turn) 'screwdriver' (cf. *kręcić* 'turn', verb stem *kręt-*)

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² The infinitive is the citation form of the verb in Polish, e.g. *nos-i-ć*. It consists of the verb stem (here the root *nos-*), the thematic suffix *-i-* and the inflectional infinitival ending *-ć*. In the case of *spis-a-ć* 'to write up' in (5a), the verb stem contains the prefix *s-* and the root *pis-* while the thematic suffix is *-a(j)*.

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The term "interfixal-paradigmatic formations" implies the occurrence of an interfix (here the linking vowel -*o*-) and a paradigmatic formative in the process of coining such complex words (see Nagórko). Paradigmatic derivation³—instead of conversion or zero-derivation—is the term commonly employed since the 1970s by Polish morphologists with reference to a change of the syntactic category (and/or of the inflectional paradigm) of the base which is not accompanied by the addition of any affix. Waszakowa (7–23) provides a lengthy discussion of the scope of paradigmatic derivation in Polish. She mentions "inflectional derivation" (Pol. *derywacja bezafiksalna*) as terminological alternatives to paradigmatic derivation (or to conversion/zero-derivation), attested in various Polish morphological monographs and research papers. Let us add that "transflexion" (see Štekauer et al. 26, 222; Sevčikova) is yet another term used to refer to an affixless category change in Slavonic languages, such as Czech and Slovak.

The proposal of verb-to-noun conversion in interfixal-paradigmatic compounds is viewed with suspicion by, among others, Szymanek (*A Panorama*), who points out that verb stems, such as *pis*- in *pisać* 'write' and *kręt*- in kręcić 'turn', do not appear as independent nouns. Some other verb stems may occur as nouns in isolation, but their meanings depart from their senses exhibited inside interfixal-paradigmatic compounds. For instance, the verb stem *nos-/nosz*- 'to carry' appears as the lexicalised plural noun *nosze* 'stretcher', while the verb stem *ciqg*- 'to pull' occurs as the polysemous noun *ciqg* exhibiting the senses 'course; sequence; (engine) thrust'. Consequently, nouns such as those in (1–4) are treated by Kurzowa, Grzegorczykowa and Puzynina, and Booij ("Morphology") as exocentric compounds which consist of a noun stem and a verb stem (connected by the vowel -*o*-), i.e. as formations whose internal morphological structure can be represented as $[N+LV+V]_N$.⁴

However, I will argue below that the compounds in (1-4) should be analysed as complex lexemes headed by nouns resulting from verb-to-noun conversion. In section 2, such compounds will be compared briefly with endocentric N+LV+N

³ One of the reviewers rightly points out that the terms "paradigmatic formative" and "paradigmatic derivation" may be interpreted differently outside of the Polish grammatical tradition. For instance, Spencer (416) postulates paradigmatic word formation in cases where "the word formation process relies on a relationship between the items that are currently present in the lexicon and not on a syntagmatic process of affixation, compounding or whatever." Booij (*Construction Morphology* 33) recognises the paradigmatic relationship between English abstract nouns with the suffix *-ism* and personal nouns terminating in the suffix *-ist*, e.g. *baptism* — *Baptist*.

⁴ Kolbusz-Buda presents yet another interesting analysis of interfixal-paradigmatic formations and exocentric [V+LV+N] compounds in Polish. She assumes that a zero suffix is placed compound-externally, e.g. as in [[list-o-nosz]-ø] 'mail carrier' and [[wyrw-i-ząb]-ø] 'tooth-puller, dentist'. This zero morpheme is said to determine the morphosyntactic features and the semantic interpretation of the resulting compound. Booij ("Morphology") argues that there is no independent evidence for postulating compound-external (derivational) zero suffixes.

compounds containing unambiguously nominalised verb stems. In section 3, the range of senses of interfixal-paradigmatic compounds will be presented and shown to be characteristic of deverbal nouns. In section 4, the contrast between inter-fixal-paradigmatic formations and exocentric verb-Lv-noun compounds in Polish will be emphasised. Section 5 presents an outline of an analysis of interfixal-paradigmatic compounds in the framework of Construction Morphology. Conclusions are given in section 6.

2. THE BLURRED BORDER BETWEEN ENDOCENTRIC N+LV+N COMPOUNDS AND INTERFIXAL-PARADIGMATIC FORMATIONS

Kurzowa, Grzegorczykowa and Puzynina, and Szymanek (*A Panorama*) juxtapose interfixal-paradigmatic formations with endocentric N+N compounds such as those in (5) below.

(5) a. *jadl-o-spis* (food+LV+list) 'menu' (cf. *spisać*_V 'write up', verb stem *spis-*, *spis*_N 'list')

b. *lek-o-spis* (medicine+LV+list) 'pharmacopoeia' (cf. *spisać*_V 'write up', spis_N 'list') c. *księgozbiór* (book+LV+collection) 'book collection' (cf. *zbierać*_V 'collect', verb stem *zbier-*, *zbiór*_N 'collection')

d. *drzewozbiór* (tree+LV+collection) 'arboretum' (cf. *zbierać*_V 'collect', *zbiór*_N 'collection')

e. *wodościek* (water+LV+sewer) 'gutter; trough' (cf. *ściekać*_V 'trickle', verb stem *ściek*-, *ściek*_N 'sewer')

f. *parowóz* (steam+LV+wagon) 'steam locomotive' (cf. *wozić*_V 'carry, transport', verb stem *woz*-, *wóz*_N 'wagon')

The second element of the compounds in (5) is deverbal,⁵ as is shown by its phonological⁶ and semantic relatedness to the verbs *spisać* 'to write up', *zbierać* 'to collect', *ściekać* 'to trickle' and *wozić* 'to transport'. Nevertheless, it is recognised (by the above-mentioned authors) as a noun (and not a verb stem) since it exhibits

⁵ However, the compounds in (5) are placed by Grzegorczykowa and Puzynina in the same class as N+N compounds which consist of underived nouns, e.g. *lqd-o-lód* (land+Lv+ice) 'ice sheet' and *miod-o-krzew* (honey+Lv+bush) 'honeybush'.

⁶ Some of the verb stems or verb roots in (5) exhibit allomorphy. The verb stem (i.e. prefix+-root) in (5c–5d) shows the variant forms *zbier-*, *zebr-*, *zbior-*, *zbior-* in (5c–d); while the root in (5f) occurs as *woz-* or *wóz-*.

roughly the same sense when it appears in isolation and when it appears as a compound constituent. The compounds in (5) differ in this respect from the compounds mentioned in section 1. Let us recall that the latter compounds (i.e. interfixal-paradigmatic formations) contain verb stems which either do not occur as nouns in isolation or which can be nominalised but exhibit markedly distinct readings when attested as independent nouns in contrast to their interpretation as compound constituents.

It is worth pointing out that the border between such unambiguous N+N (i.e. N+LV+N) compounds and interfixal-paradigmatic compounds is not as sharp as it may appear. The current senses of the (nominalised) verb stems *lom-*⁷ and *wlaz*-when attested as independent nouns depart from their meanings as parts of compounds. However, if obsolete senses of those nominalised verb stems were taken into consideration (as mentioned in Doroszewski's dictionary), the compounds in (6–7) below could be treated as $[N+LV+N]_N$ nouns, similarly to *księgozbiór* 'book collection' and *jadłospis* 'menu'.

- (6) a. *wiatr-o-lom* (wind+LV+break) 'windfallen tree; area of damage by the wind'
 b. *lom* (N) '1. crowbar 2. piece of rock which broke off 3. dessert of melted chocolate with broken pieces of biscuits, wafers and dried fruit 4. (obsolete) debris, wreckage' (from *lamać/lomać (się)* 'to break (itself)')
- (7) a. *dup-o-wlaz* (ass+LV+get_inside) '(vulg.) ass-licker, flatterer'
 b. *wlaz* 'hatch, manhole; (obsolete) intruder' (from *wlazić* 'to get inside')

The complex nouns *wodotrysk* 'water fountain', *drzeworyt* 'woodcut' and *wodospad* 'waterfall' also look like interfixal-paradigmatic compounds.⁸ The verb stem *trysk* (cf. *tryskać* 'to gush) does not normally occur as a noun. The nominalised stem *ryt* (cf. *ryć* 'to carve') is usually interpreted as denoting a rite (i.e. a religious ritual) and a common sense of the deverbal noun *spad* is 'fruit blown down from a tree by the wind'.

(8) a. *wod-o-trysk* (water+LV+gush) 'water fountain' (cf. *tryskać* 'gush')
b. *drzew-o-ryt* (wood+LV+carve) 'woodcut' (cf. *ryć* 'carve, dig')
c. *wod-o-spad* (water+LV+fall) 'waterfall' (cf. *spadać* 'fall down')

⁷ Although the verb stem appears nowadays as *lam*-, as in the verb *lamać (się)* 'to break (itself)', its older form was *lom*-, as attested in the obsolete verb *lomać (się)* 'to break (itself)', which is listed in Doroszewski's dictionary.

⁸ Grzegorczykowa and Puzynina (462) treat *wodotrysk* 'water fountain' and *wodospad* 'waterfall' as endocentric N+N compounds, whereas they include *kwasoryt* 'etching' in the group of N+V compound nouns (464).

However, the less common reading of the noun *ryt*, as confirmed by comprehensive online dictionaries of Polish, such as WSJP and SJP PWN, is the sense of 'engraving', whereas the noun *spad*, apart from denoting fallen fruit, can also denote an inclined part of a terrain (or a roof). Moreover, Doroszewski's dictionary lists the noun *trysk* 'splashing water or mud particles' with the label "rare". Consequently, the complex words in (8) could, in principle, be treated as N+N compounds.

Polish interfixal-paradigmatic compounds, as well as the N+N compounds listed in (5a–d) above, exhibit some properties attributed cross-linguistically to synthetic and parasynthetic compounds,⁹ i.e. to compounds headed by deverbal elements, such as the English complex lexemes *housekeeping*, *home construction*, *dishwasher* and *book-seller*. Their left-hand constituent (N₁) often denotes the internal argument of the verb,¹⁰ i.e. the argument bearing the semantic role of Theme, Patient or Result.

(9)	N ₁ as Theme:		<i>iek</i> (water+LV+trickle) 'gutter, trough' <i>btok</i> (sperm+LV+flow) 'spermatorrhea'
(10)	N ₁ as Patient:	<i>miodożer</i> (honey+Lv+gobble) 'honey badger' <i>ludojad</i> (people+Lv+eat) 'man-eater'	
(11) N ₁ as Product/ Result:		lt:	<i>piwowar</i> (beer+LV+brew) 'brewer' <i>bajkopis</i> (fable+LV+write) 'fable-writer'

The next section will provide semantic arguments which support the treatment of the right-hand constituents in the compounds under analysis as products of verbto-noun conversion.

⁹ Elements of synthetic compounds occur as independent lexemes (e.g. *truck* and *driver* in English *truckdriver*) or as inflectional stems of independent lexemes (e.g. *krwi-* 'blood' and *dawca* 'giver, donor' in Polish *krwiodawca* 'blood donor'). In contrast, the right-hand constituent of a parasynthetic compound is not an independent lexeme, e.g. the bound form *-pijca* 'one who/which drinks' in Polish *krwiopijca* 'bloodsucker'. Naccarato employs the term "(para)synthetic compounds", since she points out that it may be difficult to classify some Russian compounds in a non-arbitrary fashion as either synthetic or parasynthetic formations.

¹⁰ The left-hand constituent of interfixal-paradigmatic compounds can also denote Location or Path (*górolaz* 'mountain climber'), Instrument/Means (*rękopis* 'manuscript', *maszynopis* 'typescript'), or Force (*wiatrolom* 'windfallen tree'). See Kurzowa (28–29) and Kolbusz-Buda (137–44) for further discussion.

3. THE RANGE OF SENSES OF INTERFIXAL-PARADIGMATIC FORMATIONS

Although the right-hand constituents of the compounds in question (as exemplified in 1–4) do not (normally) occur as deverbal nouns in isolation, the meanings exhibited by such formations are characteristic of deverbal nouns, including converted nouns and suffixal nouns. Cross-linguistically, nominalisations allow eventive and non-eventive readings (see e.g. Grimshaw; Bauer et al.; Lieber; or Iordăchioaia et al. for a detailed discussion of English nominalisations; Melloni on Italian nominalisations; Rozwadowska and Bloch-Trojnar on Polish deverbal nouns).

One reservation has to be made. The eventive readings (such as 'action/process of V-ing', 'act of V-ing', 'episode of V-ing') are rare in the case of interfixal-paradigmatic compounds,¹¹ although such senses are common with conversion nouns, such as *odczyt* 'reading' in (12a), and with suffixal nouns, e.g. *odczytanie* and *odczytywanie* 'reading' in (12b–c), derived from the verb *odczytać* (PFV) and *odczytywać* (IPFV) 'to read'. The deverbal nouns in (12) are complex event nominals in the sense of Grimshaw, since they can occur with internal arguments and with aspectual temporal modifiers.

- (12) a. *odczyt wskazań licznika gazu co dwa miesiące* 'reading the gas meter every two months'
 - b. *odczytywanie listy obecności przez 15 minut* 'reading the attendance list for fifteen minutes'
 - c. *odczytanie hieroglifów w ciągu 2 miesięcy* 'reading hieroglyphs within two months'

The eventive reading can be postulated for the interfixal-paradigmatic compounds in (13), which contain the stem of the reflexive verb *toczyć się* 'to be under way, to continue'. When the verb stem occurs as an independent noun, it exhibits the sense 'course, progress'. It can be added that the compounds in (13) are not typical action/ process nouns since they denote medical conditions. They are not felicitous with temporal modifiers, e.g. ?**krwotok z nosa przez 20 minut* 'a nosebleed for twenty minutes' (cf. *dwudziestominutowy krwotok z nosa* 'a twenty-minute nosebleed').

- (13)a. krwotok (blood+LV+flow) 'bleeding, blood loss'
 - b. *ślinotok* (saliva+LV+flow) 'hypersialosis, excessive salivation'

¹¹ Polish interfixal-paradigmatic compounds differ from English $[N[V]_N]_N$ compounds, which can more readily occur with the eventive reading (as is observed by Lieber), e.g. *interest-rate cut*, *dog attack*.

Various non-eventive readings are attested with deverbal nominalisations, as exemplified by Polish conversion nouns (in examples 14a–19a).¹² They are also exhibited by interfixal-paradigmatic formations, as shown in (14b–19b).

(14) agentive nouns:

a. *nadzór* 'supervision; supervisors' (cf. *nadzorować* 'supervise')
b. *grot-o-łaz* (cave+LV+roam) 'potholer' (cf. *łazić* 'roam')

(15) instrumental nouns:

a. *zaczep* 'fastening device' (cf. *zaczepić* 'to fasten')
b. *śrub-o-kręt* (screw+Lv+turn) 'screwdriver' (cf. *kręcić* 'turn')

(16) names of inanimate (impersonal) agents:

a. *pociąg* 'train' (cf. *pociągnąć* 'pull')
b. *pasz-o-ciąg* (fodder+LV+pull) 'feeding system' (cf. *ciągnąć* 'pull')

(17) product (i.e. result) nouns:

a. *wypiek* 'baked item (esp. baked bread)' (cf. *wypiekać* 'bake')
b. *drzew-o-ryt* (wood+LV+carve) 'woodcut' (cf. *ryć* 'carve, dig')

(18) patient/ theme nouns:

a. *odrzut* 'reject' (cf. *odrzucić* 'reject')
b. *wiatr-o-łom* (wind+LV+break) 'wind-fallen tree' (cf. *łamać* 'break')

(19) locative nouns:

a. *właz* 'manhole, hatch' (cf. *włazić* 'get inside, crawl in')

b. wod-o-trysk (water+LV+gush) 'water fountain' (cf. tryskać 'gush')

Another argument which can be presented against the exocentric analysis of *listo-nosz* 'mail carrier' and *śrubokręt* 'screwdriver' is the difference between such compounds and the undeniably exocentric compounds discussed in the next section.

 $^{^{12}}$ A similar set of senses is identified for English suffixal and affixless deverbal nouns by Bauer et al. and Lieber. Kolbusz-Buda (118) notes that a fairly wide range of non-eventive readings is exhibited by English $[N[V]_N]_N$ compounds (i.e. $[[NV]-\sigma]$ formations in her analysis), e.g. *chimney sweep*, *woodcut, doorstop*.

4. EXOCENTRIC V+LV+N COMPOUNDS IN POLISH

Polish interfixal-paradigmatic compounds such as those exemplified in (1-4) and investigated in the previous sections can be contrasted with the exocentric V+LV+N compounds listed in (20). It is not only the word-order which is different for N+LV+V and V+LV+N compounds, but also their range of meanings. In contrast to the $[N+[V]_N]_N$ or N+N compounds discussed in sections 2 and 3, the compound nouns in (20) exhibit a restricted range of senses. They characteristically denote names of personal agents, although some of them can also be interpreted as names of inanimate agents (e.g. *zawalidroga* in 20f). They usually carry emotional colouring. They are stylistically marked (as colloquial, vulgar or jocular terms).

- (20) a. gol-i-broda (shave+LV+beard) 'barber' (cf. golić 'shave')
 - b. mocz-y-morda (soak+LV+gob) 'drunkard' (cf. moczyć 'soak')
 - c. obszcz-y-mur (piss+LV+wall) 'bum, wino' (cf. obszczać 'piss (on something)')
 - d. wydrw-i-grosz (jeer+LV+penny) 'fraud' (cf. wydrwić 'jeer')
 - e. wyrw-i-ząb (pull_out+Lv+tooth) '(joc.) tooth puller, dentist' (cf. wyrwać 'pull out')
 - f. *zawal-i-droga* (mess_up+Lv+road) 'a person or vehicle that obstructs the road or which is dangerous to other cars and drivers' (cf. *zawalić* 'heap (with something)')

Moreover, the compounds in (20) contain the vowel -i-/-y-, pronounced as /i/ or /i/, as the linking element, instead of the vowel -o- present in other compounds. The vowel -i-/-y- functions as a thematic suffix in verbs such as *golić* 'to shave' and *moczyć* 'to soak', while in the case of the verb *wyrwać* 'to rip out, to pluck out' (with the thematic suffix -a-) the vowel *i*- can be treated as a part of the imperative marker -ij (cf. *wyrwij* 'rip out.IMP.2SG).

Polish compounds with the verb stem in the initial position exhibit a pattern inherited from Proto-Slavonic (Długosz-Kurczabowa and Dubisz 72), which was frequently employed to form given names in Old Polish, such as *Mśc-i-sław* (lit. revenge for glory) and *Kaz-i-mir* (lit. destroy peace). It resembles the pattern characteristic of Romance V+N compound nouns, such as *lavapiatti* (lit. wash-dishes) 'dishwasher' or *portalettere* (lit. carry letters) 'mail carrier' in Italian (Boo-ij "Morphology"). This Romance pattern is represented in English by the agentive nouns *pickpocket* and *killjoy*. As in English,¹³ V+N compounds in Polish belong

¹³ As is pointed out by one of the anonymous reviewers, the pattern for V+N compounds can be regarded as unproductive in present-day English. The compound noun *pickpocket* was coined at the end of the 16th century, while *killjoy* dates back to the 18th century.

to a morphological type which is currently less common than N+N (or $[N+[V]_N]_N$) compound nouns.¹⁴

5. AN ANALYSIS OF INTERFIXAL-PARADIGMATIC FORMATIONS IN THE FRAMEWORK OF CONSTRUCTION MORPHOLOGY: SCHEMA UNIFICATION AND EMBEDDED PRODUCTIVITY

The framework of Construction Morphology (CxM), as postulated by Booij (*Construction Morphology*), and developed further by, among others, Masini and Audring, Gaeta and Angster, and Naccarato, recognises constructions as basic units of analysis. Constructional schemas in CxM express generalisations about sets of existing complex words. They consist of statements of morphosyntactic and phonological operations accompanied by the specification of the meaning of constructions (linked by \leftrightarrow) (see Booij *Construction Morphology*; Masini and Audring). Schemas differ in their degree of abstractness (i.e. degree of specification). A high-level and fairly abstract constructional schema proposed for English endocentric compounds by Booij (*Construction Morphology* 7) and Masini and Audring (381) is given in a slightly modified form in (20), as in Cetnarowska (*Compound Nouns* 190).

(21) $[[a]_{Xk} [b]_{Yi}]_{Yi} \leftrightarrow [SEM_i \text{ with relation } R \text{ to } SEM_k]_i$

The part of schema (21) preceding the double-sided arrow says that a concatenation of two constituents in English gives rise to a compound whose syntactic category is determined by its right-hand constituent. The part following the arrow states the semantic interpretation of the compound. The whole compound is a hyponym of its right-hand constituent while the left-hand constituent functions as the modifier of the semantic head.

The schema in (21) needs to be revised, as in (22), to express the properties of Polish endocentric compound nouns.

¹⁴ When discussing various types of Polish compounds attested in Doroszewski's dictionary, Grzegorczykowa and Puzynina (463) observe that N+V+(sUFF) nouns, such as *śrubokręt* 'screwdriver' or *ludożerca* 'man-eater, cannibal', constitute the most numerous and the most productive type of compound nouns in Polish. Jadacka (58–59) emphasises the productivity of N+V interfixal-paradigmatic compounds in Polish in the middle of the twentieth century, especially those denoting types of machines and gauges. Nagórko (2835) remarks that, in the case of Polish compounds motivated by a verb phrase, right-headed structures (i.e. N+V compounds) are much more productive in contemporary Polish than left-headed (i.e. V+N) structures, such as *lamistrajk* (lit. break strike) 'strikebreaker, blackleg' or *golibroda* (lit. shave beard) 'barber'.

(22) a.
$$[[a]_{XkStem} + LV + [b]_{NiStem}]_{Nj} \leftrightarrow [SEM_i \text{ with relation } R \text{ to } SEM_k]_j$$

b. $[[a]_{NkStem} + LV + [b]_{NiStem}]_{Nj} \leftrightarrow [SEM_i \text{ with relation } R \text{ to } SEM_k]_j$

The two schemas in (22) show that the constituents of Polish compounds are stems which are linked by means of a vocalic interfix (i.e. a linking vowel). In the case of endocentric compounds it is the right-hand element which determines the type of the entity denoted by the whole compound and determines its syntactic category. An intermediate-level schema in (22a), quoted from Cetnarowska (*Compound Nouns* 197), leaves the category of the first constituent unspecified; it can thus be an adjective or a noun. (22a) dominates a more specific schema in (22b), in which the first constituent of a compound noun is categorially specified as a noun.

Two schemas can be combined into a single complex one in order to account for the internal structure of so-called Polish interfixal-suffixal formations in (23) (which are discussed by, among others, Grzegorczykowa and Puzynina; Kolbusz-Buda; Cetnarowska, "Competition").

- (23) a. *mięs-o-żer-c-a* (meat+LV+eat+SUFF+NOM.SG) 'carnivore' (cf. *żreć*_V 'devour', bound form -*żerca*)
 - b. *krwi-o-pij-c-a* (blood+LV+drink+SUFF+NOM.SG) 'blood sucker' (cf. *pić*_V 'drink', bound form -*pijca*)

It is important to note that the VERB+SUFF combinations occurring in the compounds in (23) are not attested as independent lexemes. Formations of this type (in Slavonic, Germanic, as well as Romance languages) are treated as parasynthetic compounds by Bisetto and Melloni, who propose (following Booij *The Grammar*) that the derivation of parasynthetic compounds, such as the Polish adjective *niebieskooki* 'blue-eyed', involves schema unification.¹⁵ In the case of the compounds in (23), we can assume the conflation of the schema in (22b), independently required to generalise over endocentric compound nouns, with an appropriate suffixation schema, which is the schema in (24b) generalising over agentive deverbal nouns with the suffix -*ca*.¹⁶

(24) a. $[[a]_{NkStem} + LV + [b]_{NiStem}]_{Nj} \leftrightarrow [SEM_i \text{ with relation } R \text{ to } SEM_k]_j (=22b)$ b. $[V_i - ca]_{Nj} \leftrightarrow [AGENT \text{ of } SEM_i]_j$

¹⁵ Gaeta and Angster propose a conflation of constructional schemas to account for German AN-*ig* formations, which can be treated as parasynthetic or synthetic compounds.

¹⁶ The vowel -*a* can be placed in brackets in the derivational suffix -c(a) since it is an inflectional ending, i.e. the marker of NOM.SG.

The conflation of the two schemas in (24) gives rise to the unified schema in (25), quoted after Cetnarowska ("Competition" 254).¹⁷ The string consisting of a verb stem and the suffix *-ca* is recognised in (25) as a morphological constituent (surrounded by square brackets), even though it does not function as an independent word. The string consisting of a noun stem, a linking vowel and a verb stem is posited as a unit (carrying the index p) for the purposes of the semantic analysis of the parasynthetic compound noun ending in *-ca*, although there is no corresponding compound verb of this type in Polish (cf. **mięsożreć* '(intended meaning) to gobble meat' and **krwiopić* '(intended meaning) to suck blood'). Schema (25) states that the left-hand nominal constituent in the interfixal-suffixal compound *mięsożer-ca* and in the hypothetic but unattested verb **mięsożreć* specifies the meaning of the action denoted by the verb stem żreć 'to gobble'. To be more exact, in the case of *mięsożerca* and **mięsożreć*, the noun *mięso* 'meat' denotes the Patient participant in the action of gobbling food.¹⁸

 $(25) < [[a]_{Nk} + LV + [[b]_{Vi} + -ca]_{Nm}]_{Nn} \leftrightarrow [\text{Agent of SEM}_p]_n >$ where $[[a]_{Nk} + LV + [b]_{Vi}] \leftrightarrow [\text{MOD}_k \text{SEM}_i]_p$

The mechanism of schema unification can be employed to conflate a selected schema for compounding (i.e. 22b) with an appropriate conversion schema. Conversion is interpreted in Construction Morphology as an affixless change of the syntactic category of the base and its meaning (Masini and Audring 379). The conversion schema in (26) describes the internal structure and semantic interpretation of agentive deverbal conversion nouns in Polish which exhibit masculine grammatical gender, e.g. *rząd* 'government'¹⁹ (from *rządzić* 'to govern') and *thumacz* 'translator' (from *thumaczyć* 'to translate').

¹⁷ Cetnarowska ("Competition") adopts the insights from Booij's ("The Nominalization") analysis of the nominalisations of Dutch particle verbs. She follows Booij ("The Nominalization") in representing unattested complex predicates as semantic units.

¹⁸ One of the reviewers observes that the use of the short form MOD in the constructional schema in (25), or in related schemas (e.g. 27, 30, 31), is slightly misleading since, in the compound nouns discussed in this article, the left-hand constituent may function as an argument of the head, as in the case of *bajkopis* (lit. fable write) 'fable writer'. Consequently, this is not a relationship of modification in the strictest sense. However, the word "modifier" is used here in a broad sense, as in Szymanek (*Introduction* 48) and Booij ("The Nominalization"), to denote the non-head constituent of a compound which modifies or restricts the meaning of the head. For instance, Booij ("The Nominalization") employs the term "modifier" to refer to the left-hand constituents of the Dutch compounds *boosdoener* 'evil doer' and *laatkomer* 'late comer'. The element *boos* represents the internal argument of the deverbal head *doener*, while *laat* serves as a modifier of the deverbal noun *komer*.

¹⁹ A less common meaning of this noun is the action sense 'ruling over someone, an exercise of authority' (see SJP PWN). The Polish Academy of Sciences' Great Dictionary of Polish (WSJP)

(26) [$[x]_{Vi}]_{Nj[+masculine]} \leftrightarrow [Agent of SEM_i]_j$

The unified schema in (27) is able to generalise over the internal morphological structure and the semantic interpretation of agentive interfixal-paradigmatic compounds, such as *grot-o-laz* (cave+Lv+roam) 'potholer' (cf. *lazić* 'roam') and *sero-war* (cheese+Lv+brew) 'cheese-maker'.

 $(27) < [[a]_{Nk} + LV + [[b]_{Vi}]_{Nm}]_{Nn} \leftrightarrow [\text{Agent of SEM}_p]_n > \\ \text{where } [[a]_{Nk} + LV + [b]_{Vi}] \leftrightarrow [\text{MOD}_k \text{SEM}_i]_p$

The right-hand compound constituent in the schema in (27) is treated as a nominalised verb stem, yet the operations of compounding and verb-to-noun conversion take place simultaneously. Consequently, the nominalised stem (i.e. *laz-* or *war-*) does not have to be attested as an independent agentive noun.²⁰

Schema (27) identifies the string consisting of a left-hand noun stem, the linking vowel -*o*- and a (non-nominalised) verb stem as a semantic constituent (with the index p), although potential compound verbs such as ?*grotolazić* 'to go potholing' and ?*serowarzyć* 'to make cheese' are not attested (or are not institutionalised)²¹ in Polish.

Since morphological constructional schemas specify both the morphosyntactic properties and the semantic interpretation of complex words, schemas (28a–c) are required to generalise over masculine gender deverbal conversion nouns which exhibit other non-eventive readings, e.g. the sense of Instrument, Product (i.e. the concrete result) and Location.²²

(28) a. $[[x]_{Vi}]_{Ni[+masculine]} \leftrightarrow [Instrument of SEM_i]_i$

b. $[[x]_{Vi}]_{Ni[+masculine]} \leftrightarrow [Product of SEM_i]_i$

c. $[[x]_{Vi}]_{Ni[+masculine]} \leftrightarrow [Location of SEM_i]_i$

suggests that the action reading was the primary sense of the noun derived by means of conversion. Consequently, the development of the agentive reading in the case of *rząd* follows the metonymic pattern of sense extension exemplified by other affixless or suffixal action nouns, which may denote an event or a participant involved in an event.

²⁰ The (obsolete) lexeme *war* 'boiling water, heat' is not an agentive noun. It is related to the verb *wrzeć* 'to boil' (see WSJP).

²¹ A Google search reveals the occasional occurrence of the non-institutionalised verbal noun *grotolażenie* 'potholing'.

²² For reasons of space, I do not mention here other conversion schemas, e.g. those which predict the occurrence of deverbal nouns denoting objects of action (Themes or Patients) and Impersonal Agents.

The schemas in (28) describe the internal structure and meaning of deverbal conversion nouns in Polish listed in section 3 in examples (14–19), such as the instrumental noun *zaczep* 'fastening device', the noun *wypiek* 'baked item' denoting a product/result, or the locative noun *wlaz* 'manhole, hatch'.

The schemas in (28) and in (26) are instantiations of the more abstract (higher-level) constructional schema in (29). Schema (29) states that deverbal conversion nouns (of masculine gender) can denote either the event of V-ing or a participant involved in the event of V-ing.

(29) $[[x]_{v_i}]_{v_i|_{masculine]}} \leftrightarrow [EVENT of SEM_i or entity involved in SEM_i]_i$

Each of the schemas in (28) can be unified with an appropriate compounding schema to describe the internal structure and semantic interpretation of selected interfixal-paradigmatic formations. The unified schema in (30) accounts for the properties of instrumental compound nouns, such as *śrubokręt* 'screwdriver' and *korkociąg* 'corkscrew'.

 $(30) < [[a]_{Nk} + LV + [[b]_{Vi}]_{Nm}]_{Nn} \leftrightarrow [Instrument of SEM_p]_n >$ where $[[a]_{Nk} + LV + [b]_{Vi}] \leftrightarrow [MOD_k SEM_i]_p$

The unified schema in (31) generalises over names of results/products such as *drze-woryt* 'woodcut' and *maszynopis* 'typescript'.

 $(31) < [[a]_{Nk} + LV + [[b]_{Vi}]_{Nm}]_{Nn} \leftrightarrow [Product of SEM_p]_n >$ $where [[a]_{Nk} + LV + [b]_{Vi}] \leftrightarrow [MOD_k SEM_i]_p$

The interfixal-paradigmatic compounds *wodotrysk* 'water fountain' and *wodospad* 'waterfall' can be described by means of the unified schema in (32).

$$(32) < [[a]_{Nk} + LV + [[b]_{Vi}]_{Nm}]_{Nn} \leftrightarrow [Location of SEM_p]_n > where [[a]_{Nk} + LV + [b]_{Vi}] \leftrightarrow [MOD_k SEM_i]_p$$

An interesting aspect of unified schemas, which can be observed in the case of interfixal-paradigmatic compounds in Polish, is the phenomenon of embedded productivity. Booij (*Construction Morphology* 47) employs this term when talking about unproductive word-formation processes which become productive when they cooccur (i.e. when they are unified) with other word-formation processes. He observes that the formation of NV compounds in Dutch is unproductive, yet its productivity rises when such compound verbs are embedded in (para)synthetic compound nouns, such as *brandblusser* 'fire extinguisher', or in (para)synthetic compound adjectives, e.g. *haatdragend* (lit. hate-bearing) 'resentful'.

Unprefixed verbs in Polish do not frequently undergo conversion into nouns (except for some semantic classes, such as verbs of motion, see the nouns *bieg* 'race', *chód* 'manner of walking'). Verb-to-noun conversion affects mainly prefixed verbs (cf. Waszakowa; Cetnarowska, "Constraints"), as is shown in (33).

- (33) a. the root *laz* in the verb *lazić* 'roam', **laz* is not an independent (deverbal) noun compare: wlaz 'hatch' (wlazić_V 'get inside'), wyłaz 'exit' (wyłazić_V 'get out'), przelaz 'stile' (przelazić_V 'pass')
 - b. the root *pis* in the verb *pisać* 'write', **pis* is not an independent noun compare: *napis* 'inscription' (*napisać*_V 'write'), *opis* 'description' (*opisać*_V 'describe'), *przepis* 'recipe' (*przepisać*_V 'copy; prescribe'), *spis* 'list' (*spisać*_V 'write down'), *zapis* 'record' (*zapisać*_V 'record, register')
 - c. the root nos-/nosz- in the verb nosić 'carry'; *nos is not a deverbal noun (see the unrelated noun nos 'nose' or the lexicalised deverbal noun nosze 'stretcher') compare: donos 'denunciation' (donosić_v 'denounce'), nanos 'deposit, driftage' (nanosić_v 'deposit'), unos 'lift capacity' (unosić_v 'lift'), wznos 'raising, uplift' (wznosić_v 'raise')

In contrast, the verb stems in Polish interfixal-paradigmatic formations are preferably unprefixed:²³

- (34) a. *grot-o-laz* (cave+Lv+roam) 'potholer' (not **grot-o-wlaz*)
 - b. *dziej-o-pis* (history+LV+write) '1. (bookish) chronicler; 2. (dated) chronicle' (not **dziej-o-zapis*)
 - c. *biust-o-nosz* (bust+LV+carry) 'bra' (not **biust-o-unosz* or **biust-o-unos*)

This restriction can be stated as being a part of the constructional schema, i.e. as a constructional requirement (cf. Masini and Audring 377).

²³ There may be a semantic explanation for the occurrence of prefixed verb stems in such interfixal-paradigmatic compounds as *drog-wskaz* (road+LV+indicate) 'signpost' and *wod-o-wskaz* (water+LV+indicate) 'water gauge'. There is a marked difference between the meaning of the prefixed verb *wskazać* 'to indicate' and the unprefixed verb *kazać* 'to order'.

6. CONCLUSION

The focus of the discussion in this paper was directed at a particular group of so-called interfixal-paradigmatic formations in Polish. These are compound nouns which consist of a noun stem and a verb stem connected by an interfix, e.g. *grotolaz* 'potholer' and *rękopis* 'manuscript'.

A commonly held view (see Kurzowa; Grzegorczykowa and Puzynina; Szymanek, *A Panorama*) is that they should be treated as exocentric compounds, since the verb stem does not occur as an independent noun (e.g. *pis*- in *pisać* 'to write') or else it occurs as a noun in a different sense than as a compound constituent (e.g. *ciqg* 'course', cf. *korkociqg* 'corkscrew' and *ciqgnqć* 'to pull').

Therefore, [N+LV+V] compound nouns are placed aside by the above-mentioned authors from endocentric compounds (in which the verb stem appears as an independent noun in the same sense as in the compound), e.g. *księgozbiór* 'book collection' (cf. *zbiór* 'collection').

I argued in favour of the opposite view, namely that the right-hand constituent in *rękopis* 'manuscript' or *grotolaz* 'potholer' should be treated as a nominalised verb stem (undergoing V-to-N conversion). Firstly, drawing a strict boundary between (exocentric) [N+LV+V] compounds and (endocentric) [N+LV+N] compounds in Polish may be difficult, since there occur dubious cases, such as *wiatrolom* 'wind-fallen tree'. Secondly, I emphasised the differences between interfixal-paradigmatic formations, such as *korkociąg* 'corscrew' and *listonosz* 'mail carrier', and (truly) exocentric [V+LV+N] compounds, such as *wyrwiząb* (pull_out+Lv+tooth) 'tooth puller, dentist (joc.)'. Thirdly, I showed that the overall range of meanings of N+LV+V (or [N+LV+[V]_N]_N) compound nouns corresponds (roughly) to the range of senses exhibited by nouns derived by means of V-to-N conversion.

Adopting the framework of Construction Morphology, I assumed that there is a unification (i.e. conflation) of the operations of compounding and conversion. I pointed out that the unification of schemas is independently justified for Polish parasynthetic compounds (referred to as interfixal-suffixal lexemes by Grzegorczykowa and Puzynina), such as *mięsożerca* 'carnivore', whose formation involves a fusion of compounding and suffixation.

The additional advantage of postulating the unification of schemas for compounding and V-to-N conversion is the possibility of accounting for the phenomenon of "embedded productivity", which predicts that certain subschemas become more productive when they are unified. While unprefixed verbs in Polish undergo conversion into nouns less commonly than prefixed verbs, in the case of the unification of compounding and conversion it is unprefixed verb stems that typically become constituents of Polish interfixal-paradigmatic formations.

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THE INTERACTION OF NOMINALISATION AND COMPOUNDING IN POLISH: ON THE ANALYSIS OF *LISTONOSZ* 'MAIL CARRIER' AND *KORKOCI4G* 'CORKSCREW' IN CONSTRUCTION MORPHOLOGY

This paper compares two analyses of interfixal-paradigmatic formations in Polish, such as *listonosz* 'mail carrier' and *korkociąg* 'corkscrew'. They are often interpreted as exocentric compounds consisting of a noun stem and a verb stem connected by a linking vowel, i.e. as $[N+LV+V]_N$ formations (Kurzowa; Booij, "Morphology"). The proposal defended here is the treatment of such lexemes as $[N+LV+[V]_N]_N$ compounds, in which the right-hand verb stems are assumed to undergo conversion into nouns. Semantic arguments are presented in support of such an assumption. Moreover, differences

are emphasised between properties of the interfixal-paradigmatic formations in question and features of exocentric compounds in which the verb stem stands in the initial position, e.g. *moczymorda* 'drunkard'. The analysis adopted here in the framework of Construction Morphology involves the simultaneous application of two morphological operations, namely compounding and nominalisation (i.e. verbto-noun conversion), in the formation of interfixal-paradigmatic lexemes. Such an assumption allows for the explanation of the phenomenon of "embedded productivity" (Booij, *Construction Morphology*).

Keywords: exocentric compounds; verb-to-noun conversion; interfixal-paradigmatic formations; Construction Morphology; Polish.

WSPÓŁDZIAŁANIE PROCESU NOMINALIZACJI ORAZ TWORZENIA WYRAZÓW ZŁOŻONYCH W JĘZYKU POLSKIM: ANALIZA ZŁOŻEŃ LISTONOSZ I KORKOCIĄG W UJĘCIU MORFOLOGII KONSTRUKCYJNEJ

Streszczenie

W artykule porównano dwa sposoby analizowania formacji interfiksalno-paradygmatycznych w języku polskim, takich jak *listonosz* oraz *korkociąg*. W wielu pracach, m.in. w monografii Kurzowej oraz w artykule Booija "Morphology", formacje tego typu traktowane są jako złożenia egzocentryczne z prawostronnym członem czasownikowym. Według alternatywnej analizy, przyjętej w niniejszym artykule, prawostronny element takich złożeń to rzeczownik odczasownikowy utworzony w wyniku derywacji paradygmatycznej (określanej także jako konwersja lub derywacja zerowa). Przedstawione są argumenty semantyczne na rzecz tej hipotezy, tj. uznania [N+LV+[V]_N]_N za schemat wewnętrznej struktury formacji *listonosz* i *korkociąg*. Podkreślone są różnice pomiędzy formacjami tego typu a rzeczownikami złożonymi o strukturze czasownikowo-rzeczownikowej, takimi jak *moczymorda* i *golibroda*, które są powszechnie traktowane jako formacje egzocentryczne. Zaproponowana w artykule analiza formacji interfiksalno-paradygmatycznych w ujęciu morfologii konstrukcyjnej zakłada jednoczesne zastosowanie dwóch operacji morfologicznych (tj. derywacji paradygmatycznej oraz tworzenia złożeń). Założenie to pozwala na wyjaśnienie zjawiska "produktywności zanurzonej" (ang. *embedded productivity*) w tworzeniu polskich formacji interfiksalno-paradygmatycznych.

Slowa kluczowe: złożenia egzocentryczne; rzeczowniki odczasownikowe (derywaty paradygmatyczne); formacje interfiksalno-paradygmatyczne; morfologia konstrukcyjna; język polski.