

Word-formation in slavic languages – an onomasiological perspective

Livia Körtvélyessy

P.J. Šafárik University, Košice (Slovakia)

Livia Körtvélyessy. WORD-FORMATION IN SLAVIC LANGUAGES – AN ONOMASIOLOGICAL PERSPECTIVE

Abstract. The paper discusses methodological principles of evaluation word-formation systems in cross-linguistic research. The emphasis is on an onomasiological aspect of evaluation that is viewed as complementary with the semasiological evaluation. These two perspectives are indispensable for obtaining an objective picture of word-formation at various levels of generalization, including individual languages, language genera, language families and language areas. The paper illustrates the proposed method on a sample of Slavic languages.

Keywords: word-formation, onomasiology, structural richness, saturation value, Slavic languages.

Ливия Кьортвелйеси. СЛОВООБРАЗУВАНЕТО В СЛАВЯНСКИТЕ ЕЗИЦИ – ОНОМАСИОЛОГИЧНА ПЕРСПЕКТИВА

Резюме. Статията разглежда принципите на ономасиологичен крослингвистичен анализ на словообразователните системи на езиците. Акцентът се поставя на ономасиологичния аспект на анализа, който се разглежда като допълващ семасиологичен анализ. Тези две гледни точки са неразривни с оглед добиването на обективна картина на словообразуването на различни нива на обобщаването, включително отделните езици, езиковите родове, езиковите семейства и езиковите райони. Статията разглежда описания метод въз основа на примери от славянските езици.

Ключови думи: словообразуване, ономасиология, семасиология, метод на изчисление, стойност на насищане.

Mainstream research into word-formation relies on the semasiological approach. Exceptions can be found in the onomasiological tradition established by M. Dokulil (1962) and developed in works of his followers, mainly (but not exclusively) in the Central and East Europe (for a brief summary of the onomasiological tradition in word-formation see Štekauer 2005 and Grzega 2015).

This paper presents basic results of cross-linguistic research into word-formation in Slavic languages from the *onomasiological* point of view. It is intended as a complementary analysis to the semasiological examination of word-formation in this language family presented in Körtvélyessy (2016). In general, large-scale cross-linguistic research into word-formation systems – unlike the other linguistic levels – is still in the egg, not to speak about the onomasiology-based cross-linguistic exploration of this field. The monograph by Štekauer, Valera and Körtvélyessy (2012), relying mainly on the semasiological data, appears to be a first swallow.

The scope of the present paper is more modest than that of Körtvélyessy (2016): it is restricted to the affixation processes in Slavic languages. Nevertheless, it is innovative by applying an onomasiological method for cross-linguistic comparison of word-formation systems. The significance of examining word-formation systems of languages from the onomasiological perspective follows from the fact that only in the unity of semasiological and onomasiological data one can obtain a comprehensive picture of the situation in word-formation in a language genus, language family or language area.

The onomasiological approach employed in my research is combined with the concept of *structural richness* the quantitative representation of which is the *saturation value* (Körtvélyessy 2015). It will be demonstrated that evaluation of word-formation from cross-linguistic perspective, based on the parameter of structural richness, is much more feasible than that based on productivity.

I start with introducing a sample of Slavic languages, the scope of the parameters analysed, and the method of their evaluation. The second part of the paper provides an analysis of the data.

Körtvélyessy (2016) analyses individual word-formation systems in 14 Slavic languages by evaluating 98 word-formation features from the point of view of semasiology. The starting point of a semasiological approach is the form of a complex word. This kind of information tells, however, nothing about the process of conceptualization. The semasiological saturation value, employed in Körtvélyessy (2016), informs us about the structural richness of a word-formation system or of a particular word-formation process but, on the other hand, it does not provide us with information about how individual conceptual/semantic categories are represented in the formation of new complex words. The onomasiological perspective starts from conceptualization of an object to be named and explains how individual semantic categories are / can be represented by the word-formation system of a particular language (for details see Štekauer, 2005). No doubt, these two methods

of word-formation analysis are complementary, the fact that has been ignored in the mainstream works on word-formation.

Different sources provide unequal numbers of Slavic languages. If one compares two representative databases, WALS and Etnologue, they differ in the number of Slavic languages covered. The differences stem from inclusion/exclusion of languages like Rusyn, Slavomiliano, Silezian, Polabian, and from treating Serbian and Croatian as a single or two different languages. Given these discrepancies my sample of languages maps the most recent volume on word-formation in European languages, notably, Müller, Ohnheiser, Olsen and Rainer (eds.) *HSK Word-Formation. An International Handbook of the Languages of Europe*. The volume provides the most systematic (though not comprehensive) information about word-formation in European languages. Table 1 provides a list of languages whose word-formation characteristics are discussed in this paper:

| Name of the language | Code of the language | Countries |
|----------------------|----------------------|------------------------|
| Macedonian | mkd | Macedonia |
| Bosnian | bos | Bosnia and Herzegovina |
| Slovene | slv | Slovenia |
| Croatian | hrv | Croatia |
| Serbian | srp | Serbia |
| Bulgarian | bul | Bulgaria |
| Sorbian, Upper | hsb | Germany |
| Polish | pol | Poland |
| Kashubian | csb | Poland |
| Czech | ces | Czech republic |
| Slovak | slk | Slovak republic |
| Ukrainian | ukr | Ukraine |
| Belarusian | bel | Belarus |
| Russian | rus | Russia |

Table 1. Overview of the language sample¹

The problem with the onomasiological analysis of word-formation systems in general is the lack of data. There are relatively few sources that provide comprehensive information on the correlation between semantic categories and word-formation processes/rules/affixes, even though remarkable exceptions do exist, such as Daneš, Dokulil and Kuchař (1967) for the system of derived nouns in Czech and

Szymanek (2010) covering Polish word-formation system. Consequently, collection of data of onomasiological nature is a complex, demanding and exigent task for derivational morphologists.

My data comes from three sources. First, I have made use of a word-formation database that has been developed by Štekauer and Körtevélyessy for two decades. The second source includes various language-specific descriptive grammars and works specially dealing with word-formation of a particular language (e.g., Dokulil 1962, Daneš 1967, Horecký 1994, Horecký, Bosák and Buzássyová 1989, Szymanek 2010, Unbegaun 1957, Lewis 2000) and other publications containing data on word-formation/derivation. An important, most recent, source of data is Müller et al. 2016) even though descriptive grammars mainly focus on the formal facet of word-formation. Third, any problematic cases were consulted with morphologists with expertise in word-formation of a particular sample language.

The objective of semasiologically oriented research into word-formation in Slavic languages (Körtevélyessy 2016) was to evaluate the structural richness of word-formation in the sample languages. Its quantitative expression is the parameter of saturation value which is calculated as a proportion between the number of word-formation processes / rules synchronically used for the formation of new complex words in a language and the total number of word-formation processes / rules covered by one's research. The selection of the structural complexity for the evaluation of word-formation is necessitated by the inapplicability of the productivity index/degree for comparative purposes in projects that also cover 'minor' languages. The most important theoretical and methodological problems include:

- i. Non-existence of a universally applicable method of productivity computation: both Aronoff's and Baayen's approaches (Aronoff 1976, Aronoff and Anshen 1998, Baayen and Lieber 1991, a series of other articles by Baayen, e.g., 1993, 1994a, 1994b) are basically restricted to affixation, thus ignoring the crucial fact that each act of word-formation results from competition among all possible ways of forming new complex words of a particular semantic category (cf. Körtevélyessy et al. 2015, Štekauer to appear). Any attempt to reduce the computation of productivity to one selected word-formation process / type necessarily distorts the results.
- ii. Non-availability of comparable and compatible corpora in various languages of the world; a cross-linguistic research cannot be restricted to 'major' languages for which there exist large corpora and representative dictionaries.
- iii. The problem of fuzzy boundary between actual vs. potential words (e.g., Aronoff 1983, Bauer 1999, Plag 2001) and fuzzy boundaries between inflectional and derivational morphology(). Fuzziness of this sort becomes a serious problem for any productivity computation: it is difficult to arrive at objective results if we are not quite sure what should actually be included in computation.

The concept of structural complexity of a word-formation system avoids these obstacles: it takes into consideration all synchronically productive word-formation

processes and rules without regard to the degree of their productivity. The fuzziness problem is eliminated in this method by concentrating on prototypical cases. What matters is the synchronic capacity of a word-formation process or a rule to form new complex words. This capacity is evidenced by existence of actual complex words.

This approach makes it possible to reveal different word-formation strategies dominating word-formation of individual languages. Thus, for example, while some languages may heavily rely on compounding, with no employment of prefixation, conversion, reduplication and /or other word-formation processes, other languages may make use of a much wider range of word-formation processes (see section 3). Similarly, a particular language may express the category of, for example, Instrument by a single suffix while some other languages may make productive use of several types affixes, or even various word-formation processes. Furthermore, the parameter of structural complexity informs us which of these ways of expressing a specific semantic category are typical for a language genus, family and/or area. From a different perspective, we can also compare the existing similarities and differences inside a language and among languages in the way they represent a set of semantic categories. Knowledge of this sort is important for understanding the nature and the internal diversity of word-formation systems in languages of the world.

From this it follows that an important advantage of the proposed method is that the saturation value allows for comparison of the structural richness of word-formation systems at various levels of generalization: (i) intra-language level – comparison of the relative contribution of individual word-formation processes within one language; (ii) inter-language level (a) – comparison of the roles of selected word-formation processes in various languages; inter-language level (b) – comparison of word-formation systems of various languages; (iii) supra-language level – comparison of word-formation in various language genera; language families and/or areas (Sprachbunds). All in all, the saturation value provides us with an important insight into the nature of word-formation systems in languages of the world.

Analogically to Štekauer et al. (2012) my research maps 21 semantic categories that are characteristic for Slavic languages, such as Agent, Instrument, Locative, Causative, Durative, Similarity, Distributive, Iterative, Diminutive, Augmentative, etc. The data is analysed from the perspective of their representation by individual affixation processes in the sample languages. The evaluation encompasses prefixation, suffixation, infixation, prefixal-suffixal derivation, circumfixation and transfixation. In addition, the one-to-many relation was also examined, i.e., the possibility to express one and the same semantic category by more than one affix. The saturation value is calculated as a number of languages in which a particular semantic category is represented by a specific affixation process (Table 3). From a different perspective, it identifies the number of semantic categories represented by a given affixation process in a particular language (Table 4).

| | mkd | bos | slv | hrv | srp | bul |
|-----------------|-----------------|------------|---------------|---------------------|-----------------|---------------------|
| Agent | suf >1 | suf >1 | suf >1 | suf >1 P-S | suf >1 | suf >1 |
| Patient | suf >1 | suf >1 P-S | suf >1 P-S | suf >1 P-S | suf >1 P-S | suf >1 P-S |
| Instrument | suf >1 | suf >1 P-S | suf >1 | suf >1 P-S | suf >1 P-S | suf >1 |
| Locative | pr >1 suf >1 | | suf >1 P-S | suf >1 pr >1 P-S | pr >1 suf >1 | suf >1 pr >1 P-S |
| Temporal | | P-S | pr P-S | | pr | suf P-S |
| Diminutive | suf >1 | | suf >1 | suf >1 | suf >1 | suf >1 |
| Augmentative | suf >1 | | suf >1 | suf pr >1 | pr >1 suf >1 | suf >1 |
| Female | suf >1 | suf | suf >1 | suf >1 | suf >1 | suf >1 |
| Male | | | | | suf | |
| Causative | suf >1 | pr P-S | suf | suf >1 P-S | P-S pr | suf >1 |
| Attenuative | | | | | | P-S |
| Iterative | suf | | suf | suf | pr suf | pr suf |
| Distributive | | | pr | pr | pr | pr |
| Durative | | | pr | pr >1 | pr | pr |
| Intensification | | | pr >1 | pr >1 | pr >1 | |
| Similarity | | | suf >1 | suf >1 | suf >1 | |
| Action N | suf >1 | suf >1 | suf >1 | suf >1 | suf >1 | suf >1 |
| Abstract N < V | | | suf >1 | suf | suf | suf |
| Abstract N < N | suf >1 | suf P-S | suf >1 | suf >1 P-S | suf >1 P-S | suf >1 P-S |
| Abstract N < A | suf >1 | | suf >1 | suf >1 | suf >1 | suf >1 |
| Collective | suf >1 | suf | | suf >1 | suf >1 | suf >1 |

Table 2. Overview of semantic categories and their correlation with affixation processes
 sf = suffix, sf >1 = more than one suffix available; pf = prefix, pf >1 more than one prefix
 available; trn = transfix, in = infix, P-S = prefixal-suffixal derivation

| | hsb | pol | csb | ces | slk | ukr | bel | rus |
|--|--------------|------------|-----------|------------------|------------------|------------------|------------------|------------------|
| | suf >1 | suf >1 P-S | suf >1 | suf >1 P-S | suf >1 P-S | suf >1 | suf >1 | suf >1 |
| | suf >1 P-S | suf >1 P-S | suf >1 | suf >1 P-S | suf >1 P-S | suf >1 P-S | suf >1 P-S | suf >1 P-S |
| | suf >1 P-S | suf >1 | suf >1 | suf >1 | suf >1 | suf >1 P-S | suf >1 | suf >1 |
| | suf >1 P-S | suf >1 | pr >1 | suf >1 Pr >1 P-S | pr >1 suf >1 P-S | pr >1 suf >1 P-S | pr >1 suf >1 P-S | pr >1 suf >1 P-S |
| | | pr | pr >1 | pr P-S | pr P-S | pr >1 P-S | pr >1 P-S | pr >1 P-S |
| | suf >1 | suf >1 P-S | suf >1 | suf >1 | suf >1 infx | suf >1 | suf >1 | suf >1 |
| | pr >1 suf >1 | suf >1 | suf >1 | pr >1 suf >1 | pr >1 suf >1 | suf >1 | suf >1 | suf >1 |
| | suf >1 | suf >1 | suf >1 | suf >1 | suf >1 trn | suf | suf >1 | suf >1 |
| | | | suf >1 | | suf >1 | suf | | |
| | sufP-S | suf >1 P-S | sufP-S | pr P-S suf | pr P-S suf | suf >1 P-S | suf >1 P-S | suf >1 P-S |
| | | | | P-S | P-S | | | |
| | | | | suf | suf trn | pr | pr | suf |
| | | P-S | | pr | pr | P-S | pr | P-S |
| | | | | | | | | |
| | pr >1 | pr >1 | pr >1 suf | pr >1 | pr >1 | pr sufP-S | pr >1 P-S | pr >1 P-S |
| | suf | Suf | suf | pr | pr | Pr | suf P-S | pr P-S |
| | suf >1 | suf >1 P-S | suf >1 | suf >1 P-S | suf >1 P-S | suf >1 | suf >1 | suf >1 |
| | | suf >1 | | suf >1 | suf >1 | | suf >1 | suf >1 P-S |
| | | | suf P-S | suf P-S | | suf >1 | suf P-S | |
| | suf >1 | suf >1 | suf >1 | suf >1 | suf >1 | suf >1 | suf >1 | suf >1 P-S |
| | | suf >1 | | suf >1 | suf >1 trn | suf >1 | suf >1 | suf >1 |

The data presented in Table 2 can be discussed from four different perspectives.

3. Analysis and discussion

Table 2 gives a summary of an onomasiological analysis. It identifies the type of affixation employed in individual sample languages to express a particular semantic category and identifies those semantic categories for which a particular language offers more than one affixal option. This piece of information is important for the coiner of a new word because it determines the degree of competition during the act of naming an object of extra-linguistic reality (certainly, as suggested above, other word-formation processes are as important as affixation in the creative act of naming). In addition, this sort of information makes it possible to distinguish between the semantic categories characterized by this kind of competition and those categories for which there is only one affixal option in a given language.

First, it provides us with the information on correlation between affixation and semantic categories in individual languages. In Macedonian, for example, complex words in the category of Agent are coined by means of suffixation and prefixal-suffixal derivation, and there is more than one Agentive suffix. Second, it also gives an answer to the question which of the affixation processes are most productive in coining new complex words in individual semantic categories. For example, the category of Agent mainly relies on suffixation and, moreover, in each of the Slavic languages, there are more than one agentive suffixes. Third, it is possible to identify semantic categories with affixal competition and those without affixal competition (only one affix available). Thus, the semantic categories of Agent, Patient, Instrument, Locative, Diminutive, Augmentative, Female, Causative, Action (noun) and Abstraction are dominantly competitive. In other words, the affixal systems of Slavic languages establish a competitive environment for these categories by making use more than one affix per semantic category. On the other hand, the semantic categories Temporal, Male, Iterative, Distributive and Intensification are prevalingly non-competitive in terms of affixation. On the other hand, the latter group of semantic categories do not violate the naturalness principle of biuniqueness (Dressler 2005). Fourth, Table 2 makes it possible to draw conclusions on which of the affixation processes has the highest saturation value in the Slavic languages, i.e., which of them represents the highest number of semantic categories. It is obvious at first sight that suffixation has the highest occurrence, followed by prefixal-suffixal derivation, while the role of transfixation and infixation is insignificant. This finding is in accordance with the more general conclusions of Štekauer et al. (2012) saying that suffixation and compounding are the most common word-formation processes in languages of the world.

It is for this reason that suffixation has become the focus of the next analysis summarized in Table 3 below. It specifies the capacity of suffixation to represent the examined semantic categories in the Slavic language family. As it follows from Table 3 suffixation in Slavic languages has an extremely high capacity to represent the examined semantic categories.

| | mkd | bos | slv | hrv | srp | bul | hsb | pol | csb | ces | slk | ukr | bel | rus | SAT |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Agent | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 14 |
| Patient | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 14 |
| Instrument | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 14 |
| Locative | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 14 |
| Temporal | | | | | | | | | | | | | | | 0 |
| Diminutive | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 14 |
| Augmentative | x | | x | x | x | x | x | x | x | x | x | x | x | x | 13 |
| Female | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 14 |
| Male | | | | | x | | | | x | | x | x | | | 4 |
| Causative | x | | x | x | | x | x | x | x | x | x | x | x | x | 12 |
| Iterative | x | | x | x | x | x | | | | x | x | | | x | 8 |
| Distributive | | | | | | | | | | | | | | | 0 |
| Durative | | | | | | | | | | | | | | | 0 |
| Intensification | | | | | | | | | x | | | | | | 1 |
| Similarity | | | x | x | x | | x | x | x | | | | x | | 7 |
| Action Noun | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 14 |
| Abstract N<V | | | x | x | x | x | | x | | x | x | | x | x | 9 |

| | | | | | | | | | | | | | | | |
|----------------------|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Ab- stract N<N | x | | x | x | x | x | | | | x | x | | x | x | 9 |
| Ab- stract N<A | x | | x | x | x | x | x | x | x | x | x | x | x | x | 13 |
| Collec- tive | x | x | | x | x | x | | x | | x | x | x | x | x | 10 |
| Satura- tion | 13 | 8 | 14 | 15 | 15 | 14 | 11 | 13 | 13 | 14 | 15 | 12 | 14 | 14 | |

Table 3. Suffix-based saturation of semantic categories by languages

The data clearly manifests an important role of suffixation in the majority of the examined Slavic languages. There are minimum differences inside the Slavic group: 11 out of 14 languages can express 13–15 semantic categories by means of suffixation. The only exception to this general Slavic tendency is Bosnian where suffixation is used to represent only 8 out of 21 semantic categories taken into consideration in my research. Second, the table shows that there are semantic categories that are represented by suffixes in all fourteen languages. They include Agent, Patient, Instrument, Locative, Diminutive, Female, and Action noun. Contrary to this, the semantic categories Temporal, Distributive and Durative do not seem to have suffixal support in any of the examined languages, and Iterativeness is represented by suffixation only in Kashubian.

If the onomasiological saturation values presented in Table 3 are combined with the saturation values arrived at in Körtvélyessy (2016), the result is the *total saturation value* of suffixation (Table 4). While the onomasiological saturation value is determined with regard to the use of suffixation for the expression of 21 semantic categories, the semasiological data is based on the analysis of 17 suffixation features divided into the class-changing and class-maintaining types of suffixation, and subsequently subdivided according to the word-class of the input and the output (only four major word-classes are taken into consideration, i.e., nouns, verbs, adjectives and adverbs). The 17th feature concerns the possibility of recursive application of suffixes.

Based on the cumulative data Table 4 makes it possible to rank languages according to their total structural richness. According to this data, the structurally richest languages in terms of word-formation are Slovenian, Croatian, Bulgarian, Slovak and Czech; on the other hand, Bosnian and Upper Sorbian are languages with the lowest structural richness. Another important fact follows from a comparison of the onomasiological and the semasiological data. Evidently, there is no direct proportionality between these two perspectives of word-formation. A language may be structurally rich from an onomasiological point of view

but does not have to rank high from the semasiological point of view (Serbian, Belorussian, Russian), although a high semasiological value tends to indicate a high onomasiological value (Slovenian, Croatian, Bulgarian, Czech and Slovak).

| | mkd | bos | slv | hrv | srp | bul | hsb | pol | csb | ces | slk | ukr | Bel | rus |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Onom | 13 | 8 | 14 | 15 | 15 | 14 | 11 | 13 | 13 | 14 | 15 | 12 | 14 | 14 |
| Semas | 10 | 10 | 15 | 13 | 11 | 13 | 9 | 10 | 10 | 13 | 13 | 10 | 10 | 10 |
| Total | 23 | 18 | 29 | 28 | 26 | 27 | 20 | 23 | 23 | 27 | 28 | 22 | 24 | 24 |

Table 4. Total saturation value of suffixation

The present paper pursued two fundamental objectives fundamental for the methodology of cross-linguistic comparison of word-formation systems at various levels of generalization. First, it was a typological analysis of word-formation processes in Slavic languages by application of the parameter of structural complexity the quantitative representation of which is the saturation value. The second objective was to point out the importance of a twofold, mutually complementary analysis of word-formation systems from the semasiological and the onomasiological perspectives.

If the data on other word-formation processes is processed and evaluated in a similar way, then the total saturation value can be employed as a *tertium comparationis*: a reference parameter that makes it possible to arrive at a detailed and exact comparison of word-formation in various languages, language genera, language families and/or language areas.

Notes

The language codes are based on the Ethnologue database.

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Доц. д-р Ливия Кьортвелйеси
Катедра по англистика и американистика
Университет „Павел Йосиф Шафарик“
Адрес: гр. Кошице, Словакия
✉ livia.kortvelyessy@upjs.sk

Assoc. Prof. Lívia Körtvélyessy, PhD
Department of British and American Studies
P.J. Šafárik University
Address: Košice, Slovakia
✉ livia.kortvelyessy@upjs.sk