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Word-formation from the cognitive perspective: Evidence from Czech

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ABSTRACT

This paper examines the role of conversion as a word-formation process in Czech, building upon previous research on derivational networks. While prior studies focused on derivation through affixation, this research expands the scope to include conversion, recognizing its significant role in Slavic languages. The study utilizes a modified Swadesh list, specifically ten common verbs, to analyze the word-formation potential of both derivation and conversion. The findings reveal that conversion surpasses derivation in the number of newly coined words for verbs. Semantic categories like AGENT, INSTRUMENT, and PURPOSE are prevalent in derivatives, whereas ACTION and QUALITY dominate in converted words. The study underscores the significance of conversion in shaping the Czech language's dynamic and expressive capabilities.

KEYWORDS

Conversion, derivation, inflection, semantic category, word-formation network

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1 INTRODUCTION

The current project, focused on conversion from a word-formation and cognitive perspective, builds upon the international research *Cross-linguistic research into derivational networks*, a project that has been carried since 2015 and whose results were published in a collective monograph (cf. Körtvelyessy, Bagasheva & Štekauer, 2020). This original project investigated derivational networks in 40 European languages, but deliberately omitted conversion as a word-formation process, particularly focusing only on derivation (suffixation, or prefixation, or combined derivational processes).

The motivation for the ongoing project is to extend the research on derivational networks to include conversion, which appears to play a key role also in Slavic languages.

Slavic languages are characterized by strong inflection, meaning that grammatical relations are primarily expressed through changes in the form of words, and by rich affixation. The same is true in word-formation morphology that deals with forming new words from other words predominantly using affixes (cf. Pala & Hlaváčková, 2007; Bozděchová, 2016). Although traditionally, emphasis is placed on affixation as the main word-formation process in Slavic languages, deductive typology[1] consid-

1 Deductive typology differs from inductive typology, which seeks to classify languages based on external factors such as historical development or geographical proximity. De-

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ers conversion to be a typical word-formation process for this type of language (cf. Skalička, 1935; Sgall, 1993; Bednaříková, 2009a).

The aim of the original project was to identify the systematicity and regularity in the development of derivational networks across languages. For this purpose, the concept of a derivational network was introduced, defined as the intersection of paradigmatic capacity and derivational degree. In the case of derivation, the paradigmatic capacity represents the potential quantity of derived words that can be created from a given base word. The concept of 'paradigmatic capacity' is key to understanding the potential of a word in word-formation and how many new words can originate from it. The derivational degree concerns the linear derivation of words from a base word. It represents the number of derivational steps that lead to the creation of a new word. The concept of derivational degree helps to track the depth of a derivational network and to structure the relationships between derived words. The main findings of the original project, relevant to the Czech language, are included in Bednaříková (2020), with the most interesting being the high derivational capacity: the Czech language exhibits an enormous derivational potential, with the maximum derivational network for verbs reaching up to 392 potential derivatives.

2 GOALS OF THE CURRENT PROJECT

The current project aims to:

i. Expand research on derivational networks, namely through the inclusion of conversion, which, although widely used in Slavic languages, was deliberately not considered in the previous project.
ii. Investigate conversion in the Czech language and, in pilot research, also in Russian.
iii. Analyze the influence of conversion on expressing semantic categories and cognitive concepts of speakers.

The study is a qualitative analysis with basic quantifications of the collected data. It aims to answer the following three research questions:

i. What is the role of conversion in Czech word formation compared to derivation?
ii. How does conversion manifest as a productive process in the Czech word-formation system?
iii. What cognitive and semantic categories are most commonly expressed through conversion in Czech?

ductive typology seeks to delve deeper into the internal structure of languages and identify the universal principles that govern their functioning.

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3 SAMPLE SELECTION AND METHOD

This part of the article describes the research sample and methods used in the project. As mentioned in the introduction, the project builds on previous research on derivational networks, but extends it to include conversion. To ensure comparability of results, it is necessary to start from the same material; therefore this project also uses a reduced version of the Swadesh list.

The Swadesh list is a compilation of basic concepts that the American linguist Morris Swadesh believed should be present in all cultures. These concepts then serve as a basis for cross-linguistic comparative studies, especially in the field of historical and comparative linguistics. The original list contained 225 words, but was later reduced by to 100 words (not by the authors of this article), which were selected for their universality and cultural independence. Although the Swadesh list has been criticized for its intuitiveness, it has been further developed and refined (cf. Bednaříková, Dokulilová, Hamrusová, Kopečková & Novotná, 2018). A modified version of the Swadesh list according to Sergey Yakhontov[2] was used for the purposes of this project. This version contains 100 words, of which 10 verbal lexemes were selected. The main reason for reducing the number of words was to simplify the analysis and comparison of the results with previous research (specifically, Körtvelyessy, Bagasheva & Štekauer, 2020).

The selection of 10 verbs as the research sample was motivated by the necessity of ensuring continuity with previous studies on derivational networks. In the original research, the selection of verbs was determined by the intersection of translational equivalents across 40 sample languages. To maintain methodological consistency, all chosen verbs had to meet specific criteria:

i. They must be underived (non-derived), ensuring that they represent lexemes in their most basic morphological form.
ii. They must be, if possible, monomorphemic, excluding compounds or complex formations.
iii. From a synchronically relevant perspective, they must be actively used in all 40 languages, ensuring their functional and semantic comparability.

These 10 verbs were incorporated into the current study to facilitate direct comparative analysis and further investigate the structural and cognitive patterns underlying derivational processes across languages.

As a result, the following verbs were included in the final dataset:

DÁT	‘give’
DRŽET	‘hold’
HODIT	‘throw’
HOŘET	‘burn’

2 Concept list Yakhontov 1991 100 (https://concepticon.clld.org/contributions/Yakhontov-1991-100). Concepticon. Accessed 2024-12-30.

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KOPAT	‘kick’
PÍT	‘drink’
ŘEZAT	‘cut’
ŠÍT	‘sew’
TÁHNOUT	‘pull’
ZNÁT	‘know’

The selection of verbs for the current study was conducted based on the same methodological criteria. It was primarily built on non-derivation and non-conversion, namely all verbs were primarily underived and unconverted. This ensures that they form the basis of derivational networks and are not the result of other word-formation processes.

4 THEORETICAL FRAMEWORK

The theoretical framework of this study is based on the traditions of the functional approach to language, which is closely linked to the methodological foundations of the Prague Linguistic School. A key concept here is function, which constitutes a fundamental element of the functionalist approach to language analysis. This concept, rooted in the idea of “the speaker’s linguistics” (cf. Kořenský, 1991), reflects the relationship between linguistic form, meaning, and the communicative needs of the speaker (cf. Mathesius, 1982; Vachek, 2005; Nekula, 2017, among others).

At the same time, the study is grounded in the understanding of morphology as a discipline that examines the internal structure of words and focuses on the specific aspects of conversion in languages with a rich inflectional system. This approach enables a more detailed understanding of the dynamics of word-formation processes and their functional integration into the linguistic system.

4.1 THE CONCEPT OF MORPHOLOGY

Morphology is a linguistic discipline that studies the internal structure of words and the mental system underlying their formation and use (cf. Haspelmath & Sims, 2013). It examines how words are composed of smaller meaningful units (morphemes) and how these units interact to shape a word’s meaning, function, and grammatical behavior. Aronoff and Fudeman (2011) describe morphology as a reflection of a mental system that governs the structure of words and the ways in which they are formed.

Mostly, morphology is divided into two main branches:

i. Inflectional morphology, which deals with the modification of words to express grammatical categories such as case, number, tense, or person.
ii. Word-formation morphology (word-formation), which studies how new words are derived from existing words or stems.

The study of morphology as the internal structure of words is essential for understanding the grammatical system of a language. It enables the analysis of how morphemes combine, interact, and contribute to the meaning and function of words in

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a sentence. From a syntagmatic perspective, a word is seen as a structured entity composed of morphemes that mutually influence one another, shaping its overall meaning and grammatical characteristics. This structure emerges through both inflectional and derivational processes (cf. Bednaříková, 2017).

4.2 THE CONCEPT OF CONVERSION AS A WORD-FORMATION PROCESS IN SLAVIC LANGUAGES

Conversion as a word-formation process remains a highly debated, sometimes even neglected or rejected, means of word-formation in Slavic languages. In English, and more broadly in other Germanic languages, where it is most prevalent, conversion is typically understood as a categorical shift without any accompanying formal modifications (cf. Štekauer, 2014). Even this interpretation, however, is somewhat debatable, as certain formal changes and alterations in syntactic behavior are characteristic even of non-inflectional English. Nevertheless, it must be acknowledged that in languages with rich inflection, the concept of conversion becomes somewhat problematic. Despite this, its existence can indeed be demonstrated, as has already been done in various Slavic languages — see, for instance, Waszakowa (1993) for Polish, Manova (2003) for Bulgarian, Russian, and Croatian, Jovanović (2007) for Serbian, and Bednaříková (2009a) for Czech.

With regard to Czech linguistic research, particularly in the field of word-formation morphology, it is first necessary to relate the term conversion to the phenomenon of word-class shift, the theory of parts of speech (cf. Komárek, 2006), and the term of transposition. In this context, transposition is referred to as word-class transposition, understood as the transfer of the formal component of a part-of-speech feature into the functional position of another part of speech. This transfer is conceived as a process, raising the question of whether it is an incomplete or a completed process. In the case of an incomplete transfer, the result is a secondary function of the same part of speech, meaning that the form remains the same word. This type of transposition is termed grammatical transposition. Conversely, in the case of a completed transfer, the result is a change in part of speech. This form of transposition is called word-formation transposition. In either case, the unity of lexical meaning and primary function is disrupted, which is resolved through:

i. The emergence of a secondary function.
ii. The development of a word-formation quality associated with a different part of speech.

The theory of transposition, as understood in this paper, is based on the concept of parts of speech presented in *Mluvnice češtiny* 2 (cf. Komárek, Kořenský, Petr & Veselková, 1986) and further developed in the latest corpus-based academic descriptions of Czech (Štícha et al., 2013; 2018). This approach allows for a systematic account of shifts between parts of speech based on syntactic and morphological criteria.[3]

3 Marchand's vision of word-formation (cf. Marchand, 1969) as primarily a lexical process is valuable, but transposition is so widespread in Czech that its description cannot be

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For the concept of conversion, it is precisely the second stage of word-class transposition, i.e., word-formation transposition, that is crucial. This process arises both from syntactic needs (or perhaps more precisely, communicative needs) and from the acquisition of properties characteristic of the target part of speech, where the relevant function is primary. These two conditions are interdependent and mutually reinforcing. Regarding the syntactic motivation for the process, the conceptual content typically associated with one part of speech is transferred into another part of speech, which is linked to a different conceptual content, as in Czech *skonat* → *skon.* Here, the conceptual content of an action (expressed by the verb *skonat*, 'to die') is, through the continuation of grammatical transposition, transferred into a part of speech associated with the conceptual content of a substance (*skon*, 'death'). From another perspective, the formal component of the verbal category is relocated to a syntactic position in which the primary function is that of a noun. The word-formation process (or morphological onomasiological process) applied in this case is conversion. In the given example, verbal inflection is replaced by nominal inflection, specifically the declension pattern typical of inanimate masculine nouns.

Conversion is a fascinating linguistic phenomenon that is more complex than it may seem at first glance. As seen above, the essence of conversion lies in changing the part of speech of a word without the addition of a derivational affix. Unlike derivation, which explicitly introduces new morphemes, conversion relies on the existing formal elements of a word while altering its syntactic and functional role (cf. Cetnarowska, 2001; Manova, 2011).

In inflectional languages, however, the concept of conversion presents additional challenges, particularly regarding directionality (see also below). Since inflectional morphology operates through modification — where one affix replaces another rather than being added cumulatively (Meľčuk, 2000; Bednaříková, 2009b; 2011) — there is no underlying base form that would serve as the source for all others. Consequently, any assessment of directionality in conversion within such languages must consider that morphological and grammatical category changes occur within a system where no single paradigm form can be regarded as the definitive base:

(1) zlý$_{A}$ → zlo$_{N}$
'evil' 'evil'

(2) lovit$_{V}$ → lov$_{N}$
'to hunt' 'hunt'

(3) pes$_{N}$ → psí$_{A}$
'dog' 'canine'

limited to the creation of new lexemes. While Marchand emphasizes the lexical aspect, transposition in Czech often extends into the grammatical system, where a word assumes a new function within an existing paradigm without necessarily forming a new lexeme. This aligns with the concept of word classes as outlined in the aforementioned academic works.

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There are two basic understandings of conversion: static and dynamic. The static understanding views conversion as a relationship between two words that share the same form but differ in the part of speech. For instance, the English words *fish* and *to fish* have the same form, but in one instance, it is a noun, and in the other, a verb. The dynamic understanding, on the other hand, understands conversion as a process in which a word from one part of speech actively moves to another. This understanding focuses more on how conversion happens and what its direction is. The dynamic understanding of conversion better captures the natural course of the world where events and states are constantly changing. Conversion allows us to express dynamic processes (actions) statically (as nouns) and vice versa.

In Czech linguistics, conversion is sometimes mistakenly interpreted as 'zero derivation' or 'affixless derivation'. This concept assumes that for a converted word, there is an invisible, zero affix that changes its part of speech (cf. Dokulil, 1968). The sources we are drawing on reject this notion and argue against the existence of zero derivation for several reasons:

i. Derivation is based on adding formal elements, and the zero affix contradicts this principle.
ii. Conversion exists even in languages that do not have derivational morphology, so the zero affix would not make sense in them.
iii. The existence of the zero affix would lead to problems with polysemy (multiple meanings) of affixes.

Conversion as a morphological process is not always conceived as a directional process. Arguments in favor of directionality include the partial retention of characteristics from the original word class in the new word class, whereas counterarguments emphasize factors such as intuition-based perception, the **relative unreliability** of determining directionality, and similar concerns (cf. Don, Trommelen & Zonneveld, 2000). Nevertheless, if we consider conversion as a word-formation process, we can think about directionality in terms of the transition from one word class to another. This means identifying the source category and the target category, allowing us to determine the direction of the conversion process. However, in many languages, including Czech, this transition is not always straightforward. In inflectional languages, the issue of directionality is complicated by possible bidirectionality or by historical variability.

Thus, when discussing directionality, it is essential to distinguish whether we are examining it synchronically (which word class is commonly perceived as the source) or diachronically (what the historical development of the word was). In inflectional languages, where form is not strictly tied to a single category, determining the direction of conversion can be more complex than in languages with a more isolating morphology.

The conceptualization of conversion adopted in this study presupposes the natural presence of directionality. Moreover, the rejection of directionality would contradict the very processual nature of this morphological phenomenon.

It can be concluded that conversion is closely related to the theory of parts of speech, as it is the mechanism by which the transition between parts of speech oc-

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curs. This transition can be accomplished under a mere morphological change including the change of morphological paradigm, i.e., not using any word-formation affix with a generalized meaning which is what distinguishes conversion from other word-formation processes such as derivation. Within the hierarchical conception of basal parts of speech, conversion is one of the key means of linguistic flexibility, with certain directions of conversion, such as the substantivization of adjectives, being more common than others in the natural evolution of language. This proves that conversion is not a random phenomenon but a systematic mechanism operating according to the internal rules of the language system.

The sources from which this analysis stems lean towards the dynamic understanding of conversion as a directional morphological process. Conversion is thus understood as a fully-fledged morphological process that allows the language to flexibly capture the changing world (cf. Bednaříková, 2009b).

5 SPECIFICS OF CZECH WORD-FORMATION FROM THE TYPOLOGICAL POINT OF VIEW

The Czech language belongs to the fusional (inflectional) types of language. This means that grammatical relationships are primarily expressed by inflection, that is, by changes in the form of the word. The ideal inflectional word consists of only two morphemes: the root and one affix. This affix is polyfunctional and carries cumulative information about grammatical categories such as gender, number, and case. Although Czech is a typical representative of the inflectional type of language, its word-formation also shows features of other types of languages, such as agglutination, polysynthesis, and isolation.[4]

Generally speaking, Slavic languages, including Czech, are characterized by rich possibilities of word formation, which primarily utilizes affixation. Here are the main characteristics of word formation in Czech and other Slavic languages:

i. Dominant role of affixation: Approximately 80% of words created through word formation processes in Slavic languages are formed using affixation, meaning the addition of prefixes and suffixes to base words.
ii. Productive affixation system: Slavic languages have a vast and productive system of affixes. In some languages, the number of affixes ranges in the tens, in others, even in the hundreds.

4 According to functionally oriented typology (cf. Skalička, 1935; Bednaříková, 2011) the "ideal inflectional word" is an abstract model rather than a norm. Czech exhibits this tendency, but many words, especially verbal inflection and derived nouns, contain more morphemes. This does not mean they are non-ideal, but rather that Czech employs additional morphological processes, such as suffixation and prefixation. As an inflectional language, it accumulates grammatical information, yet it is not purely inflectional — it also incorporates elements of other types.

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iii. Even though affixation plays a dominant role, conversion, meaning the change of a word's part of speech without the use of an affix, is common in Slavic languages, including Czech:

(4) teplý$_{A}$ → teplo$_{N}$
'warm' 'warmth'

iv. In the functional linguistic environment, the syntagmatic concept of a word is applied. This means that a word is understood as a structure composed of smaller units (morphemes) which mutually determine each other and thus create a complex meaning and grammatical properties of the word. This concept also applies to word formation, where new words are formed by the syntagmatic combination of a derivational base and a derivational formant.
v. Influence of morphology on syntax: The morphological properties of words, including their word-formation elements, influence their syntactic functions in a sentence. Word formation therefore plays an important role in the grammatical system of Slavic languages.

Although the word-formation systems of individual Slavic languages differ, these common characteristics demonstrate the richness and complexity of word-formation in this language family.

6 CONSTRUCTION OF WORD-FORMATION NETWORKS

Word-formation networks represent a structured organization of lexical units based on their derivation and conversion. Their construction is based on the intersection of paradigmatic capacity and the degree of derivation. This process proceeds as follows:

i. Creation of directly founded words: First, an initial (founding) word is established, from which directly derived and/or converted words are identified. In this context, paradigmatic capacity includes all possible direct derivatives, including converted words.
ii. Gradual expansion of the word-formation network: Each newly formed word is subsequently treated as a new founding word. Additional derivatives or converted forms are sought, creating linear word-formation chains. This process is repeated until the maximum degree of derivation (five levels) is reached.
iii. Maintaining a linear structure: The word-formation network must adhere to the sequential order of formation, with derivation and conversion alternating. It is not permissible to skip individual formation stages:

(5) nový → novinář (without intermediate novina)
'new' 'journalist'

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iv. Distinction of word-formation processes:
   — Derivation occurs by the addition of affixes:
   (6) znalý → znalec → znalecký
   'knowledgeable' 'expert' 'of an expert'

   — Conversion involves a shift between word classes, such as the transition from a verb to a noun:
   (7) táhnout → tah
   'pull' 'pulling'

v. Filtering of word-formation elements: The word-formation network does not include:
   — Morphological word forms:
   (8) dohodit, dohodil, dohozen, …
   'throw as far' 'threw as far' 'thrown as far' …

   — Loanwords that are not formed within the language system:
   (9) datum
   'date'

vi. Verification in dictionaries and language corpora: Each step in constructing the word-formation network must be supported by documented evidence of the lexical units' existence in dictionaries, language corpora, or other linguistic resources.

The resulting word-formation network represents a systematic arrangement of lexical units from the base word to its five-level derivatives. This model enables precise reconstruction of word-formation relationships and the identification of paradigmatic connections within the lexical system of the language.

6.1 CHALLENGES IN CREATING WORD-FORMATION NETWORKS

As mentioned above, affixes in Czech play a crucial role in both inflection and word-formation/derivation. Although both processes are additive, inflection is characterized by modification, where one segment is replaced by another. An example is the declension of the noun *dohoda* 'contract': *dohod-a* (nom. sg.) ~ *dohod-u* (acc. sg.) ~ *dohod-ě* (dat./loc. sg.). In derivation, an affix (prefix or suffix) is physically attached to the word-formation base, for example: *dohoda* 'contract' → *dohod-ov-ý* 'contracting', where *-ov* is a derivational suffix and *-ý* is the adjectival ending for nom. sg.

The complexity of both processes is further enhanced by alternations (e.g., *dohod ~ dohoď*), which function as co-formants in both inflection and derivation. In derivational suffixation, the type of inflection introduced by the suffix into the new word also plays a significant role, contributing to the differentiation of the derived word from the base word.

When creating word-formation networks, it is essential to distinguish between affixation in inflection and affixation in derivation. However, even with this distinc-

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tion, problems can arise in differentiating derivation from conversion. Conversion, unlike derivation, is a non-additive process[5] that utilizes the means of inflection, specifically changes in inflection. The main formant of conversion is the overall change in morphological characteristics, including a change in the inflectional paradigm and often a change in the part of speech.

There are several key consequences of the effort to distinguish derivation from conversion:

i. The status of stem suffixes: the stem suffixes in verbs are considered, in this concept, part of the inflectional formant and thus part of the word-formation function of change in inflection:

(10) dar → darovat
'present' 'give as a present'

ii. Deverbal nouns and adjectives are formed by conversion from a base formed by *n/t*- participles, converbs (transgressive forms), or *l*-participles:

(11) zdaněn → zdanění
'taxed' 'taxation'
(12) dotažen → dotažený
'tightened' 'tightened'
(13) nahazujíc → nahazující
'plastering' 'plastering'
(14) přiznavši → přiznavší
'having admitted' 'admitting'
(15) vyhořel → vyhořelý
'burned out' 'burned out'

iii. The change of aspect polarity is realized by prefixation, suffixation, or conversion. The project analyzes all three processes, but without a detailed examination of purely aspectual prefixes and of the question whether it is a new word or another form of the same lexeme. However, the onomasiological significance lies in the formation of momentary verbs, iteratives, and frequentatives:

(16) kopnout
'have a kick'
(17) tahávat
'pull repeatedly'
(18) hořívat
'burn repeatedly'

5 The term 'non-additive' is used to describe word-formation processes in which new words are not formed by adding physical segments (affixes) to the base word.

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iv. Members of an aspectual pair also differ in the value of finiteness and durativity:

(19) vhodit vhazovat
'throw in' 'throw in'

It is important to note that the word-formation processes included in the current project are only those that utilize either morphological means, i.e., inflectional endings and changes in morphological characteristics, and word-formation affixes. Composition, abbreviation, and univerbization are not analyzed. Problems with distinguishing derivation from conversion and with interpreting stem suffixes require careful analysis and consideration of the context in which the word occurs. Therefore, creating word-formation networks is a complex process that requires deep knowledge of Czech morphology and the ability to apply theoretical concepts to specific linguistic material (cf. Bednaříková, 2020).

7 THE RESULTS OF THE RESEARCH

The research aimed to expand the existing knowledge of derivational networks by including the word-formation process of conversion in the analysis. The original research, published in the monograph *Derivational Networks across Languages* (Körtvelyessy, Bagasheva & Štekauer, 2020), focused on derivational networks in 40 European languages, but omitted conversion. The research focused on the analysis of 10 basic verbs from the modified Swadesh list as described in section 3. The aim was to determine how many new words can be derived from these verbs by derivation and conversion. For comparison, a table and graphs were created showing the ratio of derived and converted words for each verb. Data were obtained from the *Czech National Corpus* and relevant explanatory dictionaries.

The ongoing research focused on creating word-formation networks in Czech, and, as a pilot project, also in Russian, with an emphasis on verbs. The goal was to analyze the word-formation potential of these languages and identify the semantic categories that appear in derivatives and converted words.

To analyze the semantic shifts brought about by the word-formation processes of derivation and conversion, a system of semantic categories was employed. This system is based on constructionist and cognitive linguistic approaches (Booij, 2010; Bagasheva, 2018), allowing for the examination of semantic relationships between base words and newly formed units. In identifying the semantic categories of individual words (derivatives and conversions), a set of 49 categories was used, aiming to capture the semantic specificity of the studied languages. These categories are comparative cognitive concepts, applicable across languages and independent of the formal means by which they are expressed in individual languages. Importantly, these categories are associated with the word-formation step, i.e., with a specific word-formation formant,[6] and

6 The word-formation formant in conversion is a change in the morphological characteristics of a word, which manifests itself in a change in inflection (declension/conjugation) and usually also a change in part of speech.

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do not take into account the resulting lexical meaning of the word. Examples of such categories include AGENT, PATIENT, INSTRUMENT, LOCATION, or ABSTRACTION.

All individual naming units (both derived and converted) were thus indentified by semantic categories (comparative cognitive categories). This approach allows for a detailed analysis of the semantic changes that accompany word-formation processes and contributes to a deeper understanding of the mechanisms of word-formation in Czech.

As seen in the table below, the Czech verbs exhibit a high potential for word formation. Hundreds of new words were identified for all 10 examined verbs, with conversion proving to be a more productive process than derivation.

Base verb	Derivatives	Formed not by conversion	Formed by conversion
dát 'give'	343	215	128
držet 'hold'	139	66	73
hodit 'throw'	330	108	222
hořet 'burn'	152	72	80
kopat 'kick'	272	112	160
pít 'drink'	257	122	135
řezat 'cut'	380	138	242
šít 'sew'	246	142	104
táhnout 'pull'	387	156	231
znát 'know'	311	136	175

TABLE 1. Comparison of words formed by derivation and conversion

The following claims can thus be made:

i. Table 1 shows that the most words (387) were formed from the verb *táhnout* 'pull', including 156 derived words and 231 converted words. This is followed by the verbs *řezat* 'cut' (380 words, 138 derived, 242 converted) and *dát* 'give' (343 words, 215 derived, 128 converted). The fewest words were formed from the verb *držet* 'hold' (139), which also had the lowest number of derived words (66).
ii. As seen in Figure 1 and Figure 2, the number of converted words for verbs rather highly exceeds the number of derivatives. For example, for the verb *znát* 'know' 136 derivatives and 175 converted words were identified; for the verb *táhnout* 'pull' even 231 converted words, compared to 156 derivatives.

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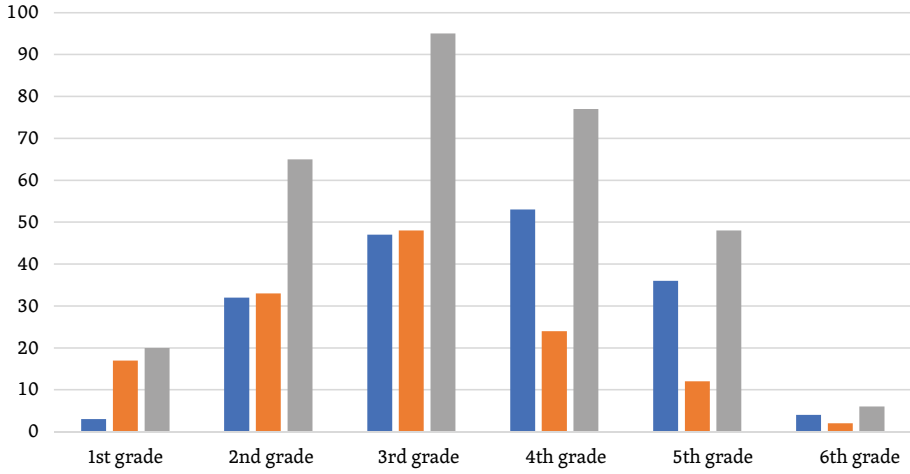

FIGURE 1. Ratio of conversion and derivation: ZNÁT 'know', where blue colour stands for conversion, orange for derivation, and grey for the total number of newly formed words

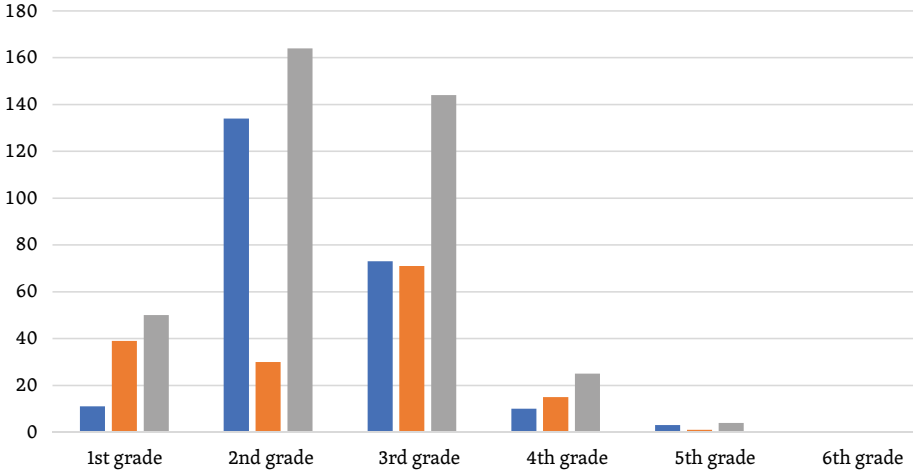

FIGURE 2. Ratio of conversion and derivation: TÁHNOUT 'pull', where blue colour stands for conversion, orange for derivation, and grey for the total number of newly formed words

iii. The pilot research project on Russian showed similar results: the verb *резать* 'cut' had 201 converted words and 197 derivatives, the verb *знать* 'know' 94 converted words and 77 derivatives, while the verb *тянуть* 'pull' had 153 converted words and 161 derivatives.[7]

7 For the notion of conversion in Russian linguistics see, for example, Smirnickij (1953), or Kubrjakova (1974).

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iv. While the semantic categories AGENT, INSTRUMENT, and PURPOSE are most frequently found in derivatives (for example, *přidavač* 'hodman' (AGENT), *přídavek* 'addition' (RESULT), and *okopávací* 'hoeing' (PURPOSE), the semantic categories ACTION and QUALITY dominate in converted words. A typical example is the conversion of the verb *řezat* 'cut' to the noun *řez* 'cut' (RESULT) or the adjective *řezaný* 'cut' (QUALITY).
v. Conversion as a word-formation process leads to the preservation of the meaning of ACTION in deverbal words. This is also reflected in the ability to express verbal categories such as aspect and relative tense. Nevertheless, the categories of ACTION and QUALITY often overlap in converted words. This suggests that conversion can lead to a strengthening of the concept of ACTION in deverbal words, even at the expense of the QUALITY category.

This study confirms the importance of conversion as a word-formation process in Slavic languages and shows the specifics of semantic categories that appear in converted words. What still needs to be explained, not only in relation to the simple quantifications shown above but also to the assignment of semantic categories, is why converted words often prevail over derivatives in the studied verbs. Here are some possible explanations:

i. Productive formation from *n/t*- participles and transgressives: in Czech, the formation of nouns and adjectives from passive participles and transgressives by conversion is very productive. For example, from *hodit*$_{V}$ 'to throw', converted forms such as *hozený*$_{Adj}$ 'thrown' and *hození*$_{N}$ 'throwing' are formed.
ii. A large number of prefixed verbs: although prefixation favours derivation, nouns and adjectives are again formed from all prefixed verbs by conversion. For example, from *dohazovat*$_{V}$ 'to throw in', forms such as *dohazování*$_{N}$ 'throwing in' and *dohazující*$_{Adj}$ 'throwing-in' are formed.
iii. Formation of aspectual pairs: conversion is often used to form aspectual pairs of verbs. For example, from the imperfective verb *házet* 'to throw', the perfective verb *hodit* ('to throw') is formed by conversion. From these verbs, deverbal nouns are then formed by conversion, e.g., *hod* 'throw' and *házení* 'throwing'.
iv. Interrelation with semantic categories: while derivation often focuses on forming words with the meaning of the agent (AGENT), instrument (INSTRUMENT), or purpose (PURPOSE), conversion focuses on expressing action (ACTION) and property (QUALITY). Since verbs primarily express action, it is natural that a large number of words with this meaning are formed by conversion.

These explanations are based on the specifics of the Czech word-formation system and help us understand why conversion plays such an important role in it, especially in forming words from verbs.

7.1 ANSWERS TO THE RESEARCH QUESTIONS

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What is the role of conversion in Czech word formation compared to derivation?

The study shows that conversion plays a crucial role in Czech word formation, often surpassing derivation in productivity. The analysis of ten selected verbs from a modified Swadesh list reveals that conversion frequently leads to more newly formed words than derivation. While derivation is more commonly associated with the creation of agent, instrument, and purpose-related words, conversion predominantly generates action and quality-related words, reinforcing its significance in the Czech linguistic system.

How does conversion manifest as a productive process in the Czech word-formation system?

The research demonstrates that conversion is a highly productive word-formation process in Czech, often creating more new words than derivation. Particularly for verbs, conversion facilitates the formation of deverbal nouns and adjectives while preserving their action- or quality-related meaning. It also plays a key role in the formation of aspectual pairs and enables category shifts without the use of affixes, making it an efficient and systematic linguistic mechanism.

What cognitive and semantic categories are most commonly expressed through conversion in Czech?

The study identifies that converted words in Czech primarily fall into the semantic categories of ACTION and QUALITY, while derived words tend to express AGENT, INSTRUMENT, and PURPOSE. This suggests that conversion plays a key role in preserving verbal semantics in nominal and adjectival forms, often maintaining the meaning of an action even when the grammatical category changes. The findings highlight the efficiency of conversion in allowing words to shift categories while retaining their core conceptual meaning.

8 CONCLUSION

The sets of word-formation series and the word-formation networks created on their basis from the words of the reduced version of Swadesh's list yielded an unexpectedly large amount of material. The processing of the material using the *Czech National Corpus*, large Czech explanatory dictionaries and Internet search engines has dealt with the potential pitfalls mentioned above as well as with the assumptions and expectations arising from the typological construct of inflectional language.

Word-formation series in the form of word-formation networks have shown some specificities of Czech word-formation. As far as derivational processes, especially

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suffixation, are concerned, one has to reckon with a complex word-formant in which the word-formation suffix plays a leading word-formation role, but not the only one. An accompanying word-formation role in flexible words is also played by the mode of inflection that the word-formation suffix entails. Word-formation suffixes are even subdivided according to the individual parts of speech they form. Alternation and its power to significantly affect the form of the word-formation suffix also play another important role in increasing the distance of the basic word from the newly coined word. However, unlike word-formation suffixes, Czech word-formation prefixes do not have this ability. The potential seam between a word-formation suffix and a word-formation base also tends to confirm a strongly fusing type of Czech, where morphemes can merge (cf. *piják* 'drunkard' → *pijácký* 'drinking').

Alongside derivation, conversion has emerged as a truly significant and productive word-formation process. With verbs as base words for word formation, converted words often even outnumber derivatives.

The aim of the work was to create word-formation series and word-formation networks from the words of the Swadesh list, according to predefined rules, and thus demonstrate the structural word-formation richness of the selected words of the core vocabulary. A secondary aim was to demonstrate not only the existence but also the word-formation potential of the word-formation process in Czech and the participation of inflectional devices in word-formation processes in this Slavic language. Another potential use of the material generated for more detailed future analyses is to identify word-formation categories using cognitive linguistics methods.

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