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Conversion in English and Czech: A Corpus Study of Semantic Relations between Nouns and Verbs

Konverze v angličtině a češtině: korpusová studie sémantických vztahů mezi substantivy a slovesy

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Abstract

The aim of this MA thesis is to carry out a corpus-based contrastive study of the semantic relations between verbs and nouns in conversion pairs in English and Czech. Pairs of verbs and nouns like *run*.v – *run*.n, *salt*.n – *salt*.v in English and *běžet*/*běhat* 'run.v' – *běh* 'run.n', *sůl* 'salt.n' – *solit* 'salt.v' in Czech are taken to be the result of a word-formation process called conversion, in which a new word belonging to a different word class is created without the addition of any derivational affixes. Using a sample of 300 such pairs in both languages, extracted from the *British National Corpus* for English and from the *SYN2015* corpus for Czech, we analyse and classify the different semantic relations existing between the nouns and verbs. We adopt a cognitive approach and classify the semantic relations based on conceptual event schemata and their elements. Because the nouns and/or verbs are often polysemous, the semantic classification also accounts for the possibility of multiple semantic relations existing between the verb and the noun in one conversion pair. In the analysis, we examine and compare the frequencies with which the different semantic relations appear in the conversion pairs in English and Czech, as well as the patterns of multiple semantic relations that appear together in a single conversion pair.

Key words: English, Czech, conversion, word-formation, semantic relation

Abstrakt

Cílem této diplomové práce je provést korpusově založenou kontrastivní studii sémantických vztahů mezi slovesy a substantivy v konverzních dvojicích v angličtině a češtině. Dvojice sloves a substantiv jako *run*.v 'běžet/běhat' – *run*.n 'běh', *salt*.n 'sůl' – *salt*.v 'solit' v angličtině a *běžet*/*běhat – běh*, *sůl – solit* v češtině jsou považovány za výsledky slovotvorného procesu nazývaného konverze, ve kterém je vytvořeno nové slovo patřící k odlišnému slovnímu druhu bez použití slovotvorných afixů. S použitím vzorku 300 takovýchto párů v obou jazycích, získaného z *Britského národního korpusu* pro angličtinu a z korpusu *SYN2015* pro češtinu, analyzujeme a klasifikujeme sémantické vztahy mezi slovesy a substantivy. Zaujímáme kognitivní přístup a sémantické vztahy klasifikujeme na základě konceptuálních schémat událostí a jejich složek. Protože substantiva a/nebo slovesa jsou často polysémní, tato sémantická klasifikace také počítá s možností existence více různých sémantických vztahů mezi slovesem a substantivem v jedné konverzní dvojici. V rámci analýzy je zkoumána a porovnána frekvence, se kterou se různé sémantické vztahy objevují v konverzních párech v angličtině a češtině, a také vzorce více různých sémantických vztahů v rámci jednoho konverzního páru.

Klíčová slova: angličtina, čeština, konverze, slovotvorba, sémantický vztah

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List of abbreviations

Adj	adjective
Adv	adverb
BNC	British National Corpus
N	noun
N>V conversion	conversion from nouns to verbs
OED	Oxford English Dictionary
PP	prepositional phrase
V	verb
V>N conversion	conversion from verbs to nouns
V/N conversion	conversion between verbs and nouns

Glosses:

ACC	accusative
adj	adjective
adv	adverb
COLL	collective noun
GEN	genitive
IPF	imperfective aspect
n	noun
PASS-PART	passive participle
PAST-PART	past participle
PF	perfective aspect
PL	plural
prep	preposition
PRES	present tense
SG	singular
v	verb

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1. Introduction

This subject of this thesis are verb and noun pairs like the English *run*.v – *run*.n, *salt*.n – *salt*.v, and the Czech *běžet*/*běhat* 'run.v' – *běh* 'run.n', *sůl* 'salt.n' – *solit* 'salt.v'. In these pairs, the noun is created from the verb or the verb is created from the noun by a process which is usually called *conversion*. Although conversion between verbs and nouns (hereafter V/N conversion) manifests itself differently in English and Czech (due to typological differences), in both languages it is characterized by word-class change without the addition of derivational affixes and it is connected with similar issues, such as the difficulty of determining the direction of the process and the wide range of semantic relations that may exist between the verb and the noun – cf., for example, the different semantic relations in pairs like *salt*.n – *salt*.v, *sůl* 'salt.n' – *solit* 'salt.v', *run*.n – *run*.v, *běh* 'run.n' – *běhat*/*běžet* 'run.v', *bottle*.n – *bottle*.v, *láhev* 'bottle.n' – *lahvovat* 'bottle.v', *pilot*.n – *pilot*.v, *pilot* 'pilot.n' – *pilotovat* 'pilot.v', *feel*.n – *feel*.v, *pocit* 'feel.n' – *pociťovat* 'feel.v'.

Our aim is to analyse and compare the types of semantic relations between verbs and nouns in V/N conversion pairs in English and Czech. We will use a corpus sample of 300 V/N conversion pairs in each language (from the *British National Corpus* for English and the *SYN2015* corpus for Czech) and classify the semantic relations in them, using dictionary definitions to determine the words' meanings (using the *Oxford English Dictionary* for English and *Slovník spisovného jazyka českého*, *Slovník spisovné češtiny* and *Nový akademický slovník cizích slov* for Czech). In the semantic classification, we will use cognitive categories connected with the conceptualization of events. More specifically, the semantic relation between the verb and the noun in a conversion pair will be described as a relation between an event schema (denoted by the verb) and one of its elements (denoted by the noun). During the analysis, the frequency with which the V/N conversion pairs are assigned the different semantic categories in English and Czech will be compared, as well as the patterns of multiple semantic relations which may appear together in one conversion pair.

In the following theoretical part, we will review the main approaches to conversion in English (Section 2.1) and Czech linguistics (Section 2.2), with special focus on existing semantic classifications of V/N conversion (Sections 2.1.3, 2.2.2). We will pay some attention to cognitive accounts of conversion as conceptual metonymy, which provide the foundation to our approach to the classification of the semantic relations in V/N conversion pairs (which we introduce in Section 3.1).

2. Theoretical background

2.1. Conversion in English

Definitions of conversion in works on English word-formation often refer to word-class change and/or formal identity as defining features, cf. the following definitions:

> Adams (1973, p. 16): "when a word which has hitherto functioned as a member of one class undergoes a shift which enables it to function as a member of another";
>
> Bauer (1983, p. 227): "the use of a form which is regarded as being basically of one form class as though it were a member of a different form class, without any concomitant change of form";
>
> Plag (2003, p. 107): "derivation of a new word without any overt marking";
>
> Bauer et al. (2015, p. 545): "a directional process which links an input and an output form that are formally but not semantically identical".

However, authors of works on conversion differ substantially in their views of conversion in several aspects. The first important difference is whether they consider this process to be word-formation or not (or to what extent). If it is considered word-formation, there are varying opinions about the nature of this process – it may be considered derivation using a zero affix, or a different type of word-formation process without the addition of any derivational material. There are also different ways of approaching the directionality of this process.

The following Sections 2.1.1 and 2.1.2 offer a brief overview of theoretical approaches to conversion in English linguistics. First, we will deal with the extent of the processes which can be considered conversion, and their place in the language system, i.e., between syntax and word-formation. We will then introduce the different approaches to conversion as a word-formation process, specifically to the question of the zero affix, as well as approaches which view conversion as relisting or category underspecification. Also, a cognitive approach to conversion as conceptual metonymy will be briefly described. Lastly, ways of determining the direction of conversion will be reviewed. Because this thesis is concerned with the semantic relations between verbs and nouns in conversion pairs, we will dedicate Section 2.1.3 to reviewing existing semantic classifications of English V/N conversion.

2.1.1. Conversion in the language system

Adams' (1973) and Bauer's (1983) definitions cited in the previous section talk about a word "functioning" or being "used" as a member of a different word class. It is not clear, however, whether this means that a new word is created or not.

It can be argued that conversion belongs to word-formation because the relationship between the two words is like that of a base word and a derived word (Bauer et al., 2015, pp. 547–548): there is a relationship of semantic dependency, where the motivated word's meaning is dependent on the motivating word's meaning, and the motivated word also has a narrower semantic scope than the motivating word. Štekauer (1996, p. 42) considers this relation of motivation "a crucial relation in word-formation". In this view, one word of the conversion pair is clearly the primary, motivating one, and the other the secondary, motivated one. Bauer et al. (2015, p. 548) also point out that the productivity of conversion is like the productivity of other word-formation processes – there are "apparently unmotivated gaps in the paradigm" and "competition with other affixal forms". Plag (2003, p. 115) also argues, specifically in connection with N>V conversion, that the idiosyncratic restrictions on productivity (e.g., *winter*.n > *winter*.v is possible, but *autumn*.n > **autumn*.v is not) are "extremely uncommon (to put it mildly) in syntax".

The answer to the question of whether conversion is a word-formation process or a syntactic process may depend on the specific processes that are referred to as conversion. Adams (1973, p. 16), for example, makes a distinction between *total conversion*, which belongs to word-formation, and *partial conversion*, which is only "a syntactic matter". Total conversion includes processes in which the resulting word exhibits the identifying features of the new word-class (*ibid.*, pp. 16–17). This delimitation is useful, for instance, in classifying conversion between nouns and adjectives. For the process to be considered total conversion, the resulting noun must exhibit nominal features (the ability to form plural and the genitive case, be preceded by determiners, follow prepositions, function as the subject and object of the sentence) and the resulting adjective must exhibit adjectival features (the ability to form the comparative and the superlative, be preceded by an adverbial modifier (e.g., *very*), function in both the attributive and predicative position in a sentence). So, for example, the conversion of the type *intellectual*.adj > *intellectual*.n is considered total conversion, but conversion of the type *poor* > *the poor* is not, because *the poor* does not take nominal inflections and can only appear with the definite article. Adams (*ibid.*, p. 18) considers *the poor* as an adjective merely behaving in

"noun-like way" and classifies this process as partial conversion, placing it outside the realm of word-formation. Other authors also make this distinction between conversion as word-formation and conversion as a syntactic process (e.g., Marchand, 1969; Quirk et al., 1985; Plag, 2003; Bauer et al., 2015). Cases like *the poor* and cases where a noun appears in the attributive position (e.g., *the beer bottle*) are usually considered to be syntactic. Cases like *hopeful candidate* > *hopeful* may be considered ellipsis, where the noun is merely left out and can be readily supplied (e.g., Marchand, 1969, p. 361), which also falls under the realm of syntax.

The question of what should and should not be included under the term conversion does not only concern the so called partial conversion, but also pairs of related words which are almost, but not absolutely formally identical, namely pairs including stress shift (e.g., ˈ*torment*.n – *torˈment*.v) and alternation in the voicing of final consonants (e.g., *believe*.v – *belief*.n). These may be included or excluded from conversion based on how strictly the criterion of formal identity of the two words is interpreted. For example, Bauer et al. (2015, pp. 552–554) suggest not to call these pairs conversion, while Štekauer et al. (2012) include pairs with stress shift under conversion, because they see stress shift as merely a secondary by-product of the word-class change, not the formative element itself.

Conversion between verbs and other word-classes, which includes the V>N and N>V type examined in this thesis, is considered a central, prototypical type of conversion and is treated as word-formation by the previously mentioned authors. There are authors, however, who exclude conversion from word-formation altogether. Also, authors who consider conversion to be a word-formation process have differing views on the specific nature of this process. The different approaches to conversion as *zero-derivation*, *recategorization*, *relisting*, and *conceptual metonymy* will be described in the following Section 2.1.2.

2.1.2. Approaches to conversion

Among the approaches to conversion as a type of word-formation process, the major difference lies in whether it is assumed that there is a zero affix attached to the base word during conversion, or not. The concept of conversion as **zero-derivation** was introduced by Marchand (1969), who described all word-formation processes in English as the creation of *syntagmas*, i.e., combinations of a *determinant* and a *determinatum* (for example, *sadness* = *sad* (determinant) + *ness* (determinatum), *blackbird* = *black* (determinant) + *bird* (determinatum)). This means that in this theory of word-formation, the result of a word-formation process is always a binary structure. To fit conversion into this model, we have to assume that the result

of the process is also a syntagma, although one part of the syntagma is not overtly expressed. Therefore, Marchand (1969, p. 359) defines conversion as "the use of a word as a determinant in a syntagma whose determinatum is not expressed in phonic form but understood to be present in content". The unexpressed determinatum is the *zero affix* and conversion is thus called *zero-derivation*.

The claim that a zero morpheme is present is supported by "an association with other syntagmas where the element of content has its counterpart on the plane of phonic expression" (*ibid.*). There is a parallelism assumed between affixation by an overt suffix and zero-derivation by a zero suffix, e.g., *legal* > *legalize* is parallel to *clean*.adj > *clean*.v, *alcohol* > *alcoholize* is parallel to *paraffin*.n > *paraffin*.v etc., because they have the same "syntactic-semantic pattern" (*ibid.*).

The approach to conversion as zero-derivation has been taken up by other authors, e.g., Kastovsky (2005), Don (2005). Don (2005) supports this approach by showing on examples from other languages than English (German and Dutch) that there are several phonological and morphological constrains operative in conversion – e.g., nouns that end in a vowel cannot be converted into verbs in German (*ibid.*, p. 4), nouns of Romance origin in Dutch cannot be converted into verbs (*ibid.*, p. 6) and derived words containing affixes rarely enter into the process of conversion in English, Dutch and German (*ibid.*, p. 5). Don (*ibid.*, p. 4) argues that these are the types of constraints that one would expect in derivation.

Other authors have argued against the conception of derivation by a zero affix, putting forward several strong arguments. Many of them are reviewed, for example, in Štekauer (1996). One of the main objections is the fact that it is not clear how many different zeroes are assumed to exist. Is there only one zero affix operating both in *clean*.adj > *clean*.v and *paraffin*.n > *paraffin*.v, which both have a different word-class as a base and also a different "syntactic-semantic pattern", or are there several different zeroes for each pattern? Because one zero cannot cover all of the different functions, this would lead us to assume the existence of "a complete 'arsenal' of homonymous word-formation zeroes" (*ibid.*, p. 40). Also, for some types of conversion, the parallelism with affixation does not hold – for example, there is no affix that forms verbs from adverbs, and so the type *out*.adv > *out*.v has no parallel in affixation based on which the existence of a zero could be postulated (*ibid.*, p. 39).

Štekauer (1996) interprets conversion as a different type of word-formation process than derivation. He does not agree that all words which are the result of a word-formation process

have to have an analysable binary form: "certain semantic components may as well be integrated into a syntagmatically unstructured form" (*ibid.*, p. 39). Therefore, there is no need to postulate a phonologically null formal element corresponding to the added meaning. Conversion is a unique word-formation process which simply consists of conceptual **recategorization** and change of word-class, resulting in a word with an "unanalysable onomasiological level" (*ibid.*, p. 46).

Lieber (2004) interprets conversion as a different type of word-formation altogether, namely a type of coinage. In this view, a converted word is not derived from the base word, but simply re-entered into the mental lexicon under a different word-class, hence the term **relisting**. The exact definition of relisting is that "[c]onversion occurs when an item already listed in the lexicon is re-entered as an item of a different category" (*ibid.*, p. 90). The argument for this treatment is that the semantic patterns of conversion are so much more varied than those of derivation that they cannot be described using the same morphological rules, and therefore they have to be different types of processes. For example, in contrast to verbs created by affixation by *-ize* and *-ify*, converted verbs exhibit a wider range of semantic types – along with action verbs, they can also be stative verbs or motion verbs, which is more similar to the semantic range exhibited by simplex verbs (*ibid.*, p. 93). This leads to the conclusion that converted verbs "behave no differently from simplex coinages" (*ibid.*, p. 94).

There are also approaches which exclude conversion from word-formation altogether. In his description of V/N conversion, Farrell (2001) takes the position that lexical roots are **underspecified** with regard to word class and can be used, or "manifest", as nouns or verbs without any word-formation process taking place. He argues that word meanings are stored in the mental lexicon as image schemata of events (an image schema is a kind of structured generalization of experience existing in the minds of speakers), i.e., they are not categorized as "things" or "processes", they are only profiled as a thing or a process in use. This view presupposes that there is no difference between how meanings of words like *walk* or *touch* and the meanings of words like *bag* or *pencil* are stored – even the words which would traditionally be considered unmotivated base nouns (*bag*.n, *pencil*.n) are stored as an image schema of the event which is typical for them (putting something into a bag, using a pencil).

The main issue with this account of conversion is the fact that some words can only "manifest" as nouns and not verbs (e.g., *broom*.n). In the word-formation account, this is expected, but it is problematic under the view that lexical roots are underspecified and can basically function as both word-classes. Farrell (*ibid.*, p. 111) claims that this happens either because these words

include not only a root, but also a nominal suffix (e.g., the suffix *-er* in *screwdriver* clearly classifies the word as a noun), or because the verbal manifestation is blocked by the existence of a verb with a similar meaning (e.g., **broom*.v is blocked by *sweep*.v). However, there are verbs converted from nouns including nominal suffixes (e.g., *pressure*.v) and blocking is not sufficient to explain why some verbs are created and some are not – e.g., the verb *tongue*.v is not blocked by the existence of *lick*.v, and competition between verbs created by conversion and other word-formation processes is plentiful, even in words with the same root (e.g., *filter*.v – *filtrate*).

There are also other accounts of conversion which do not consider it to be a word-formation process – for example, conversion can be described as *homonymy* or *polysemy*. Valera & Ruz (2021) review these accounts and come to the conclusion that they are problematic, because in homonymy, the formal identity is usually considered to be accidental, and polysemy is usually considered to be a relation between senses of one word, not between different words. They consider conversion a word-formation process and suggest *paronymy* as a better term to use for the relation between the words in a conversion pair, because it is defined as the relation between a base and a derivative (*ibid.*, p. 16).

In cognitive approaches, conversion has also been described in terms of **conceptual metonymy** (e.g., Kövecses & Radden, 1998, pp. 54–61; Dirven, 1999; Buljan, 2004; Schönfeld, 2005; Martsa, 2013). Authors usually define metonymy based on terms such as *domains*, *idealized cognitive models* (ICMs, e.g., Lakoff, 1987; Kövecses & Radden, 1998), *schemata* (e.g., Dirven, 1999) or *frames* (e.g., Koch, 1999, 2001). All of these terms basically denote generalized thought structures that result from our categorization and conceptualization of experience (e.g., Lakoff, 1987, p. 68). Metonymy is then described as the conceptual relationship between the elements of the schema / ICM / frame or between an element and the schema / ICM / frame as a whole. In connection with conversion, the relationship between, for example, *ski*.n and *ski*.v would be described as the INSTRUMENT FOR ACTION metonymy (Kövecses & Radden, 1998, p. 54).

However, there are significant differences in the use of the term metonymy, especially in the range of phenomena which the term convers, and some authors include conversion under metonymy while others do not. There are approaches which see metonymy as an effect operating on "the content of a given form" (Koch, 2001, p. 201), and only use the term to describe the relationship between different senses of one word, which excludes conversion and other types of word-formation. In contrast, Janda (2011) uses the term metonymy to describe

the relationship between words derived by suffixation and their motivating words – e.g., the relationship between the Czech *břicháč* 'person with a large belly' and *břicho* 'belly' is described as a PART-WHOLE metonymy (*ibid.*, p. 360). Dirven (1999) and Kövecses and Radden (1998, pp. 54–56) explicitly include conversion under metonymy, but they do not do not take a stance on whether words derived by overt derivational affixes should be described as an instance of metonymy as well. Schönfeld (2005, p. 167) understands conversion a special case of metonymy, because the form is identical, but concepts across different category types (events, things, relations) are related, while the traditional understanding of metonymy only relates concepts of the general category of things.

To conclude this section, we turn to approaches to determining the direction of conversion. If conversion is taken to be a word-formation process, then it is also seen as directional, with one word being the primary (motivating) one and the other being the secondary (motivated) one. However, because of the formal identity of the two words, determining the direction of conversion can be difficult. For example, is *shadow*.n converted from *shadow*.v, or the other way around?

One approach to this issue is to say that the word which came first in the language's history is the primary one. This diachronic point of view is taken up by Štekauer (1996, pp. 60–61), who even excludes pairs like *love*.v – *love*.n from conversion because genetically, one was not created from the other by conversion. If words are formed by conversion, then the one which came first genetically should be regarded as the motivating one. Which word is genetically primary depends on "extralinguistic subsequence" – the concept which comes first in the extralinguistic reality is then also primary in language, e.g., the instrument denoted by *saw*.n needs to exist first before the activity denoted by *saw*.v can exist (*ibid.*, p. 128).

However, it is often problematic to determine which word came first – dates of attestations in historical sources are not always a reliable criterion. Also, sometimes the direction which is perceived by today's English speakers is opposite to the diachronic direction – Adams (1973, p. 41) gives the example of *crowd*.n, which was created from the verb *crowd*.v, but for today's speakers, the perceived direction is opposite, because of the lowered frequency of the verb.

This leads us to a different, synchronic approach to determining the direction of conversion. Marchand (1964) puts forward a set of criteria that can be used to decide the direction based on synchronic criteria, namely the semantic content and the form of the words in a conversion pair. The most important criterion is that of "semantic dependence", which states that "[t]he word

that for its analysis is dependent on the content of the other pair member is necessarily the derivative" (*ibid.*, p. 12). In other words, if we use one word to define the meaning of a second word, then the second word is the secondary one. So, for example, we define *knife*.v as 'to use a knife', not *knife*.n as 'what is used in knifing', and therefore the verb is motivated by the noun, and not the other way around. This criterion can be problematic in cases when both definitions seem plausible, i.e., is *joke*.n defined as 'the act/result of joking', or is *joke*.v defined as 'to make a joke'?

Other criteria proposed by Marchand (*ibid.*, pp. 13–15) based on content are "restriction of usage" (the word which can be used more generally/commonly is the primary one), "frequency" (the word which is used more frequently is the primary one), "semantic range" (the word which is more specific in meaning is the secondary one) and "semantic pattern" (the direction can be decided based on the direction of productive semantic patterns in the language). The formal criteria (*ibid.*, pp. 15–18) are those of "phonetic shape" (e.g., verbs ending in *-tion* [ʃən], *-ment* [mənt], *-ure* [ʃər] and *-ade* [eɪd] are derived from nouns, because most words that end like this can only occur as nouns), "morphological type" (composite verbs like *snowball*.v are derived from composite nouns) and "stress" (if conversion between verbs and nouns of Latin/French origin including a prefix in the original language includes stress shift, then the noun is secondary, as in *con*ˈ*flict*.v > ˈ*conflict*.n).

Not only the diachronic vs. synchronic criteria, but also the different synchronic criteria may give conflicting results. Also, native intuitions about semantic dependence of words in the conversion pair can vary from speaker to speaker – Bergenholtz & Mugdan (1979) carried out a questionnaire in which native speakers were asked which word is primary in pairs of related German words, and the results for V/N conversion pairs mostly did not show a clear general preference for one direction or the other. In addition, Plank (2010) shows that the criterion of semantic dependence may lead us to establish different directions between different senses of polysemous words in a conversion pair.

In summary, it is clear that in determining the direction of conversion, the criteria used will affect the conclusions that are reached, and different issues will arise if we rely on diachronic (e.g., the unreliability of attestation dates) or synchronic (e.g., the different native intuitions about semantic dependence) criteria.

2.1.3. Semantic classification of V/N conversion in English

The semantic relations that can exist between the words in a V/N pair are clearly of different types – cf. the relation between, for example, *cry*.v – *cry*.n 'the action of crying', *rebel*.n – *rebel*.v 'to be a rebel' or *hammer*.n – *hammer*.v 'to use a hammer'. Authors have commented on the exceptionally wide range of possible semantic categories that the result of conversion can fall into, compared to other word-formation processes – cf. Plag (1999, p. 220): "the variety of meanings that can be expressed by zero-affixation is so large that there should be no specific meaning attached to the process of zero-derivation at all". In the following paragraphs, we will review several different proposals as to how to classify these possible meanings.

2.1.3.1 Marchand's (1969) classification

In his discussion of conversion (or zero-derivation, in his terminology), Marchand (1969) includes a classification of "syntactic-semantic relations underlying desubstantival verbs" (*ibid.*, p. 368) and "syntactic-semantic relations underlying deverbal substantives" (*ibid.*, p. 374). The classification is based on the assumption that "denominal verbs are verbalized sentences" (*ibid.*, p. 368) and "deverbal substantives are nominalized sentences" (*ibid.*, p. 374). Therefore, the relations are defined based on the syntactic constituent (e.g., object, object complement, etc.) that is assigned to the noun from the conversion pair in a meaning paraphrase. For example, *father*.n is the subject complement in the paraphrase of *father*.v ('to be a father'), *corner*.n is the adverbial in the paraphrase of *corner*.v ('to put in a corner'), etc. (*ibid.*, p. 368).

Using this classification of syntactic-semantic relations, Marchand (*ibid.*, pp. 368–376) defines 4 categories for N>V conversion and 4 categories for V>N conversion. The N>V categories include: the **Predicate–Subject Complement** relation (e.g., *father*, *ape*, because the verbs have the paraphrase 'be / act as / play the N'), the **Predicate–Object Complement** relation (e.g., *cash*, *cripple*, because the verb has the paraphrase 'make into / put in the form of / give the form of / convert into N'), the **Predicate–Adverbial Complement** relation (this category includes a variety of semantic patterns in which the noun is the adverbial complement in the verb's paraphrase, e.g., 'provide with N' (*muzzle*), 'put in N' (*bag*), 'deprive of N' (*bone*) etc.), and the **Predicate–Object** relation (e.g., *cream* 'make N', *fish* 'produce N by fishing/hunting', *berry* 'harvest N', *dance* 'perform N'). The V>N categories include: the **Predication** type (e.g., *advance*, *sleep*, *dislike*, where the noun denotes an activity), the **Adverbial Complement** type (e.g., *stop*, where the noun denotes 'the place of V-ing', *whistle* 'the instrument of V-ing', *spring* 'the time of V-ing', *overlap* 'the range/extent of V-ing'), the **Subject** type (e.g., *bore*,

gossip, *judge*, where the noun denotes 'the one who V-s'), and the **Object** type (e.g., *convert*, where the noun denotes 'the one who is / has been V-ed', *deposit*, where the noun denotes 'that what is / has been V-ed').

2.1.3.2 Adams' (1973) classification

Adams (1973, pp. 42–49) presents a very similar classification of N>V conversion. The main difference is that she splits the category of verbs included under Marchand's (1969) Predicate–Adverbial Complement type into three subtypes. She also uses the term "indirect object" for the constituent called object complement by Marchand. The resulting categories are: pairs where "the noun is the **object** in the paraphrase sentence" (e.g., *fish*, *blackberry*, *crusade*, *drum*, *experience*), "the noun is the **indirect object** in a paraphrase sentence" (e.g., *cash*, *cripple*), "the noun is the **complement** in a paraphrase sentence" (e.g., *father*, *ape*, but also pairs where the verb has the paraphrase 'cause something to resemble N', e.g., *sandwich*, *landscape*), the **instrumental** category (e.g., *hammer* 'perform an action by means of a hammer', *service* 'to provide with service'), the **locative** category (e.g., *pocket* 'to put into a pocket', *garden* 'to perform some activity in the garden', *winter* 'to spend the winter'), the category of "transitive verbs meaning '**to remove the N** from somebody/something'" (e.g., *bone*) and **other** (for pairs which are hard to classify, e.g. *moon* 'to wander aimlessly').

For V>N conversion, Adams (*ibid.*, pp. 52–55) proposes 4 categories based on what the noun denotes with respect to the meaning of the verb: **agent of action** (e.g., *cheat*), **concrete object/result of action** (e.g., *drink*, *catch*, *cover*, *lounge*, *cry*), **abstract result of action** (e.g., *attack*, *defeat*, *aid*), **miscellaneous phrases** (e.g., *hurry* in *to be in a hurry*, *hold* in *to catch* (*get*) *a hold of*).

Several objections can be raised against Adams' (1973) and Marchand's (1969) classifications. A general one would be that it may be more useful to rely on something else than surface syntactic constituents in classifying these relations, because the surface syntactic role of the noun in the paraphrase does not tell us much. What would be more informative are probably rather the "deeper" semantic roles of the noun in the paraphrase.

Adams (1973) comes closer to that by using categories such as "locative" or "instrumental" – however, because these categories are still mixed with those defined using terms such as "object" or "complement", the resulting classification is rather heterogenous. The specific pairs which are included under specific categories may also require some more justification – it is not clear, for example, why Adams (*ibid.*) includes *lounge* or *cover* under the "concrete

object/result of action" category when the nouns rather denote a location and an instrument (both of them meanings which form a separate category in the N>V classification, but not in the V>N classification), or why *winter* is in the locative category.

2.1.3.3 Clark and Clark's (1979) and Plag's (1999) classifications

For N>V conversion, influential semantic classifications were put forward by Clark and Clark (1979) and Plag (1999). Clark and Clark (1979, pp. 769–780) classify verbs converted from nouns into 9 categories, which they define using paraphrases, or "parent clauses" of the verbs: **locatum verbs** (e.g., "Jane *blanketed* the bed." with the parent sentence "Jane did something to cause it to come about that [the bed had one or more blankets on it]."), **location verbs** (e.g., "Kenneth *kenneled* the dog." with the parent sentence "Kenneth did something to cause it to come about that [the dog was in a kennel]."), **duration verbs** (e.g., "Julia *summered* in Paris." with the parent sentence "Julia did something to cause it to come about that [Julia was in Paris for a summer]."), **agent verbs** (e.g., "John *butchered* the cow." with the parent sentence "John did to the cow the act that one would normally expect [a butcher to do to a cow]."), **experiencer verbs** (small group including only *witness*.v, *boycott*.v and *badger*.v), **goal verbs** (e.g., "Edward *powdered* the aspirin." with the parent clause "Edward did something to cause it to come about that [the aspirin was powder]."), **source verbs** (e.g., "*piece* the quilt together" with the parent clause "do something to cause it to come about that [the quilt is together out of pieces]"), **instrument verbs** (e.g., "John *bicycled* into town." with the parent sentence "John caused it to come about that he was in town by doing the act one would normally expect [one to do with a bicycle]."), **miscellaneous verbs** (e.g., *lunch* where the noun denotes a meal, *blackberry* where the noun denotes a crop, *rear-end* where the noun denotes a part, *rain* where the noun denotes an element).

Plag (1999, p. 220) proposes 10 categories for verbs created by conversion (from both nouns and adjectives) based on the verbs' paraphrases: **locative** (e.g., *jail*.v with the paraphrase 'put into jail'), **ornative** (e.g., *staff*.v with the paraphrase 'provide with staff'), **causative** (examples only include deadjectival verbs, e.g., *yellow*.v with the paraphrase 'make yellow'), **resultative** (e.g., *bundle*.v with the paraphrase 'make into a bundle'), **inchoative** (e.g., *gel*.v with the paraphrase 'become gel'), **performative** (e.g., *counterattack*.v with the paraphrase 'perform a counterattack'), **similative** (e.g., *chauffer*.v with the paraphrase 'act like a chauffer'), **instrumental** (e.g., *hammer*.v with the paraphrase 'to use a hammer'), **privative** (e.g., *bark*.v

with the paraphrase ‘to remove bark’), and **stative** (e.g., *hostess*.v with the paraphrase ‘to be a hostess’).

Both classifications rely on paraphrases and there are similarities between the classes they propose. Clark and Clark’s (1979) location verbs are like Plag’s (1999) locative verbs, instrument verbs are like instrumental verbs, goal verbs are like resultative and inchoative verbs combined, locatum verbs are like ornative and privative verbs combined, agent and experiencer verbs are like similative and stative verbs combined. Clark and Clark’s (1979) classification is missing something like the performative category (probably because pairs in which nouns denote an action are seen as having the V>N direction). Plag’s (1999) classification is missing something like the durative category and source category. Otherwise, the differences are mostly due to the level of detail with which the categories are defined – for example, locatum verbs are understood as a category of verbs which denote movement of the thing denoted by the noun, and it does not matter whether the final location can be paraphrased as ‘on / in / at’ etc. or ‘not-on / in / at’ etc. (Clark & Clark, 1979, pp. 770–771), whereas this difference is what Plag’s (1999) ornative and privative categories are based on.

2.1.3.4 Cetnarowska’s (1993) classification

A semantic classification of nouns created by V>N conversion is proposed e.g. in Cetnarowska (1993). She divides the nouns into two major groups: those with an actional reading, and those with a non-actional reading. The group with an actional reading is subdivided into the following categories (*ibid.*, pp. 88–96): “**a single instance of V-ing**” (e.g., *kick*.n), “**a process/state as a general phenomenon**” (e.g., *desire*.n), “**the state or condition of being V-ed**” (e.g., *disgust*.n), “**the fact that one V-s or is V-ed**” (e.g., “everyone was amazed at the prisoners’ *escape*”), “**the manner of V-ing**” (e.g., “the author’s *approach*”), and “**the degree to which one V-s or is V-ed**” (e.g., “my *surprise* increased with every minute”). The last three categories include meanings which result from “contextual modulation of the general action sense” (*ibid.*, p. 96). One noun can have several meanings, and can even be ambiguous in a specific context – for example, “Her *disgust* with her husband surprised me.” can mean ‘the fact that she was disgusted with her husband surprised me’ or ‘the degree to which she was disgusted with her husband surprised me’ (*ibid.*, p. 93).

The group of nouns with a non-actional meaning is subdivided into the following categories (*ibid.*, pp. 96–105): “**the result of V-ing**” (e.g., *scratch*.n), “**the object of V-ing**” (e.g., *catch*.n, *convert*.n), “**the amount V-ed**” (e.g., “a *sip* of whisky”), “**the one who V-s**” (e.g., *cheat*.n),

"**something one can V with**" (e.g., *clip*.n), "**something which V-s**" (e.g., *delight*.n), "**a concrete instantiation of a static situation**" (e.g., *bend*.n), "**the place where one V-s or can V**" (e.g., *carry*.n 'a place where a boat is carried'), "**the period of V-ing**" (e.g., *fall*.n 'autumn'), "**the occasion of V-ing**" (e.g., *hunt*.n), "**the range of extent of V-ing**" (e.g., *stretch*.n 'the degree of ability to increase in length or width').

The classes of non-actional meanings are influenced by a generativist account of nominalization, which states that "action nouns are construed as absorbing theta-roles listed in thematic grids carried out by corresponding verbs" (*ibid.*, p. 105). A thematic grid basically specifies the semantic roles of the verb's arguments. For example, the thematic grid of the verb *reject*.v includes the agent and the patient, and the noun *reject*.n then carries (or "absorbs") the meaning of the patient. The nouns can also absorb non-argument roles, such as the location (cf. *carry*.n) or instrument (cf. *clip*.n) (*ibid.*, p. 106).

2.1.3.5 Classifications of conversion as metonymy

Semantic classifications of V/N conversion are also provided in works on conversion as metonymy. In Kövecses and Radden's (1998, pp. 54–56) conception, the relationship between the verb and the noun in a conversion pair is defined as the relationship between two parts of an event ICM, namely the "relation or predicate" (i.e., the action) and "one of the participants" (*ibid.*, p. 54). Within the Action ICM, there are 10 examples given of metonymic relations which give rise to verbs converted from nouns or nouns converted from verbs (*ibid.*, pp. 54–55):

INSTRUMENT FOR ACTION (e.g., *ski*.v)

AGENT FOR ACTION (e.g., *butcher*.v)

ACTION FOR AGENT (e.g., *snitch*.n)

OBJECT INVOLVED IN AN ACTION FOR THE ACTION (e.g., *blanket*.v)

ACTION FOR OBJECT INVOLVED IN THE ACTION (e.g., *bite*.n in *Give me one bite.*)

RESULT FOR ACTION (e.g., *screw-up*.n)

ACTION FOR RESULT (e.g., *cut*.n)

MANNER OF ACTION FOR THE ACTION (e.g., *tiptoe*.v)

TIME PERIOD OF ACTION FOR THE ACTION (e.g., *summer*.v)

DESTINATION FOR MOTION (e.g., *porch*.v in *to porch the newspaper*)

There are pairs of metonymic relationships which exist between the same two elements of the ICM, but one relation has the opposite direction than the other (e.g., AGENT FOR ACTION vs. ACTION FOR AGENT), because "the conceptual relationships that characterize content metonymies are in principle reversible" (*ibid.*, p. 62). This seems to be linked to the two opposite directions of conversion (N>V vs. V>N).

The authors explicitly link their approach to denominal verbs to Clark and Clark's (1979) study. They suggest that their semantic classes of N>V conversion can be described as instances of different metonymic relationships in the following manner (Kövecses & Radden, 1998, pp. 60–61):

locatum verbs: OBJECT OF MOTION FOR THE MOTION

location verbs: DESTINATION OF MOTION FOR THE MOTION

duration verbs: TIME PERIOD FOR A CHARACTERISTIC ACTIVITY IN THAT TIME PERIOD

agent verbs: AGENT FOR A CHARACTERISTIC ACTIVITY OF THAT AGENT

experiences verbs: EXPERIENCER OF AN EVENT FOR THE EVENT

goal verbs: RESULT FOR THE ACTION THAT BRINGS ABOUT THAT RESULT

source verbs: COMPONENT PARTS OF A WHOLE FOR THE ACTION THAT PRODUCES THE WHOLE

instrument verbs: INSTRUMENT FOR THE ACTION INVOLVING THAT INSTRUMENT

This classification is taken up and elaborated on by Martsa (2013). His classification of verbs converted from nouns follows Kövecses and Radden's (1998) typology of metonymic relationships, but he also adds several "submetonymies" for each of them, introducing subclasses operating on a lower level of abstraction. For example, the OBJECT OF MOTION FOR THE MOTION metonymy underlying Clark and Clark's (1979) class of locatum verbs is provided with the following 9 submetonymies (Martsa, 2013, pp. 139–140):

A THING (USED FOR) COVERING AN OBJECT FOR THE ACTION OF COVERING (e.g., *blanket*.v)

A THING (USED FOR) COVERING AN OBJECT PARTIALLY FOR THE ACTION OF PARTIAL COVERING (e.g., *saddle*.v)

PEOPLE FOR THE ACTION INVOLVING THOSE PEOPLE (e.g., *man*.v in *man the ship*)

A THING ATTACHED TO AN OBJECT FOR THE ACTION OF ATTACHING THAT OBJECT (e.g., *date*.v in *date the cheque*)

A THING USED FOR DECORATION FOR THE ACTION OF DECORATING WITH THAT THING (e.g., *festoon*.v in *festoon the room*)

AN OBJECT (BROUGHT) IN SPATIAL CONTIGUITY WITH ANOTHER OBJECT OR OBJECTS FOR THE ACTION INVOLVING THAT OBJECT (e.g., *fence*.v)

A THING REMOVED FOR THE ACTION OF REMOVING THAT THING (e.g., *pit*.v in *pit the cherries*)

A THING ADDED TO A FOOD OR DRINK FOR THE ACTION OF ADDING THAT THING (e.g., *spice*.v in *spice the food*)

A THING APPLIED TO A PERSON OR ANIMAL FOR THE ACTION INVOLVING THAT THING (e.g., *dope*.v in *dope the horse*)

A MEASURE TAKEN AGAINST A PERSON FOR THE ACTION INVOLVING THAT MEASURE (e.g., *subpoena*.v)

In addition, the author also argues that metaphor, as well as metonymy, can play a role in conversion. A specific group of verbs converted from nouns denoting animals is examined, e.g., *parrot*.v, with the argument that these processes are motivated by metaphorical mappings between the human and animal domains, i.e., by the HUMANS ARE ANIMALS metaphor (*ibid.*, pp. 149–158). The verb *parrot*.v is specifically based on the metaphor A PERSON WHO REPEATS WHAT SOMEONE SAYS WITHOUT UNDERSTANDING IT IS A PARROT (*ibid.*, p. 166).

More attention is paid also to V>N conversion. Along with Kövesces and Radden's (1998) ACTION FOR AGENT, ACTION FOR OBJECT INVOLVED IN THE ACTION and ACTION FOR RESULT, Martsa (2013, pp. 183–184) postulates 8 additional types of metonymies underlying V>N conversion:

ACTION FOR THE PATIENT INVOLVED IN THAT ACTION (e.g., *buy*.n)

ACTION FOR THE INSTRUMENT THAT IS USED TO PERFORM THAT ACTION (e.g., *lock*.n)

ACTION FOR THE EVENT INVOLVING THAT ACTION (e.g., *break-in*.n)

ACTION FOR AN INSTANCE OF THAT ACTION (e.g., *kick*.n)

ACTION FOR THE LOCATION OF THAT ACTION (e.g., *stop*.n)

ACTION FOR THE TIME OF THAT ACTION (e.g., *finish*.n)

ACTION/PROCESS FOR THE SENSATION CAUSED BY THAT ACTION/PROCESS (e.g., *smell*.n)

PROCESS FOR THE STATE CAUSED BY THAT PROCESS (e.g., *delight*.n)

There is also a note about the polysemy of nouns converted from verbs, which results in the possibility of placing one noun into several different categories because different metonymies underlie its different individual senses (Martsa, 2013, p. 184). For, example, the noun *love*.n is based on the PROCESS FOR THE STATE CAUSED BY THAT PROCESS metonymy in the sense exemplified by *What these kids need is love and support.*, and on the ACTION FOR THE PATIENT INVOLVED IN THAT ACTION metonymy in the sense exemplified by *He was her first love.* (*ibid.*).

Dirven (1999) postulates different types of schemata and elements that give rise to N>V conversion. The three schemata assumed to underlie conversion are: the action schema (including an AGENT acting upon a PATIENT, often using an INSTRUMENT), the location or motion schema (including an AGENT performing an action aimed at some LOCATION) and the essive schema (including an entity to which a CLASS MEMBERSHIP or an ATTRIBUTE is assigned) (*ibid.*, p. 280). There are 9 semantic roles (i.e., the elements of the schemata) assumed to give rise to converted verbs: PATIENT, INSTRUMENT, MANNER, PLACE, SOURCE, PATH, GOAL, CLASS MEMBERSHIP and ATTRIBUTE (*ibid*., p. 285). In this conception, the AGENT is excluded from the possible elements underlying conversion, because the *butcher*.v type is included under the essive schema and assumed to reflect the attribution of a CLASS MEMBERSHIP status rather than an action (Dirven, 1999, pp. 283–284).

Buljan (2004) modifies Dirven's conception slightly, disagreeing with the claim that an essive schema is used in conversion, because even in verbs like *volunteer*.v, the motivating relation is not only that of assigning CLASS MEMBERSHIP, but we also have to presume some kind of action on the part of the volunteer so that it can give rise to the dynamic meaning of the verb, i.e., "by saying *John volunteered to do the job* we are not identifying John as a member of the volunteer category, but assert that he is about to do the job on a voluntary basis; i.e. as a volunteer" (*ibid.*, p. 17). She also gives an account of another important event schema, which she calls the action-motion schema, in which an AGENT moves a MOVING PATIENT to a LOCATION, operative in the creation of verbs such as *table*.v, *muzzle*.v.

The descriptions of semantic relations in V/N conversion pairs as metonymical relations in different types of cognitive schemata of events directly influence our approach in this thesis, which we will introduce in Section 3.1.

2.1.3.6 Classifications applied to language data

Some of the categorizations which have been proposed have been tested on language data. Valera (2020) applies Plag's (1999) categories to a sample of English denominal verbs to see whether they need to be amended, as well as to see how the categories are distributed among different word-formation processes. Several occurrences of converted verbs which could not be classified into one of the categories were found in the data – for example *nightclub*.v with the paraphrase 'go into N' or *kitten*.v (as in "females, when they have *kittened*, no longer seek the company of the males") which is described as having the paraphrase 'produce N', different from the resultative category with the paraphrase 'to make into N' (Valera, 2020, p. 326–327).

Authors of semantic classifications sometimes explicitly mention that one word can be put into several different classes because it is polysemous – for example, Plag (1999, p. 221) gives the example of *eel*.v, which can mean either 'to fish for eel' or 'to move like an eel', and *crew*.v, which can mean 'to act as a member of a crew' or 'to assign to a crew'. That is why Valera (2020) does not take verbs as lexemes as the unit of analysis, but rather the verbs' individual senses.

The same is done by Mititelu et al. (2021), who investigate semantic relations in pairs of related verbs and nouns using the WordNet database (more specifically, a stand-off file including semantically annotated derivational pairs). The WordNet database is structured based on relations between individual senses of words, not between words as lexemes, and therefore is useful for this kind of analysis. The authors use yet another set of semantic classes to describe relations between nouns and verbs: **Agent** (e.g., *advocate*.v – *advocate*.n), **Instrument** (e.g., *catapult*.v – *catapult*.n), **Body-part** (e.g., *eye*.v – *eye*.n), **Material** (where the noun denotes an inanimate cause, used more often in affixation – e.g., *inhibit* – *inhibitor*), **Vehicle** (where the noun denotes a means of transportation, e.g., *taxi*.v – *taxi*.n), **By-means-of** (where the noun denotes something that enables or facilitates, e.g., *barricade*.v – *barricade*.n), **Event** (e.g., *clasp*.v – *clasp*.n), **State** (e.g., *joy*.v – *joy*.n), **Undergoer** (were the noun denotes the theme/patient, e.g., *bomb*.v – *bomb*.n), **Result** (e.g., *petition*.v – *petition*.n), **Property** (e.g., *slant*.v – *slant*.n), **Location** (e.g., *lodge*.v – *lodge*.n), **Destination** (where the noun denotes the recipient or goal, mostly found in affixation, e.g. *pay*.v – *payee*), and **Uses** (where the verbs

denotes a function of what is denoted by the noun, e.g., *lipstick*.v – *lipstick*.n). The authors themselves note that "not all relations seem to be equally justified" (*ibid.*, p. 111), in that some classes may be a subcategory of another class (e.g., Body-part, Vehicle, By-means-of and Uses seem to be types of Instruments). But the authors justify the categories on different levels of abstraction by the fact that "the relevant nouns fall into clear-cut semantic classes and combine syntactically with very coherent classes of verbs" (*ibid*.).

The classifications reviewed above, as well as their application to language data, show that there are many different types of semantic relations that can exist between the noun and the verb in a conversion pair, and there are also many different ways of classifying them. For a classification to be applicable to language data, it seems important to define categories based on clear criteria (in the classifications above, the criteria were usually meaning paraphrases or the syntactic-semantic roles of the noun in the paraphrases), and to acknowledge that there can be multiple different relations between the noun and the verb in a single conversion pair.

2.2. Conversion in Czech

Due to the inflectional nature of the Czech language, the question of whether conversion between nouns and verbs is a word-formation process or not has never been a subject of debate in the Czech linguistic tradition. The fact that each word class requires different inflectional behaviour is reflected in overt inflectional affixes, usually present also in the citation form of the word. There is almost always some visible formal change accompanying the transfer of a word from one word class to another (even if these changes do not consist in the addition of derivational affixes, but merely in the obligatory change of inflectional affixes), and therefore the idea that conversion is merely a relisting or category underspecification of the same form has not been relevant. It has always been considered a word-formation process in which a new word is created from a base word.

However, the fact that the criterion of formal identity in conversion cannot be satisfied in a language that requires verbs to be marked by thematic suffixes and an inflectional endings and nouns to be marked by inflectional endings brings about the question of whether processes like *sůl* 'salt.n' > *solit* 'salt.v', *běhat* 'run.v' > *běh* 'run.n' should be considered conversion at all, or whether the term should be reserved for languages like English, where the criterion of formal identity can be satisfied.

The central question is how to define conversion across typologically different languages. This does not only concern Czech and other Slavic languages in general, but also languages like Spanish (e.g., *aceite* 'oil.n' – *aceitar* 'oil.v'), German (e.g., *schlafen* 'sleep.v' – *Schlaf* 'sleep.n'), French (e.g., *voler* 'fly.v' – *vol* 'flight') and others (Štekauer et al., 2012).

Valera (2014, p. 164) states that in defining conversion in different languages, "word-class change and formal identity have to be interpreted differently according to the grammar of each language". If the difference in form lies only in "the minimal possible inflectional mark imposed by its new word-class" (*ibid.*, p. 159), meaning that no derivational material is added and the formal change only reflects the new inflectional paradigm necessarily connected with the word-class change, we may include the process under the term. Such a view is taken, for example, by Cetnarowska (1996) for Polish, Wiese (2002) for German, Don (2005) for Dutch, Manova (2011) for Bulgarian, Russian and Serbo-Croatian, Soares Rodriguez (forth.) for Portuguese.

However, the purely inflectional status of the thematic suffix in Czech verbs is not completely unproblematic. Although it classifies verbs into their conjugation classes and serves inflection, it is also used to express grammatical aspect and Aktionsart, with the former usually considered to be on the borderline between grammatical and lexical categories in Czech linguistics, and the latter usually considered to be a lexical category (cf. Nübler et al., 2017). Although pairs of verbs where the thematic suffix expresses lexical categories such as ingressiveness, determinativeness or factitiveness were more plentiful in earlier historical stages of Czech (Šlosar, 1981), there are still pairs like *vést* 'lead.v' – *vodit* 'lead.v' or *znervóznět* 'get nervous' – *znervóznit* 'make nervous', where the thematic suffix does not only express grammatical aspect, but also the opposition of a determinative vs. inderterminative verb (*vést* 'lead.v' – *vodit* 'lead.v') or an inchoative vs. causative verb (*znervóznět* 'get nervous' – *znervóznit* 'make nervous'). The fact that the thematic suffix also expresses lexical meanings can be an argument against its purely inflectional status.

However, there are arguments for treating the verbal thematic suffix as inflectional from the synchronic point of view. There are several important differences between inflectional and derivational affixes which classify the thematic suffix as inflectional, which we present in Table 1:

Inflectional affix	Derivational affix
has grammatical function	does not have grammatical function
does not appear in all forms of the word	appears in all forms of the word
appears in non-derived words	appears only in derived words

Table 1: Comparison of inflectional vs. derivational affixes.

The thematic suffix really is in a different "slot" than a derivational affix, although this may be obscured by the fact that Czech does not have any productive derivational affixes available for forming verbs (Dokulil, 1982a, p. 3). All verbs need to have the thematic suffix to be well formed (vs. derivation is optional), because the thematic suffix is used to conjugate verbs. This means that different verb forms have different thematic suffixes (whereas a derivational suffix appears in all forms of the derived word, and only inflectional affixes after it change during inflection) and that underived verbs also have a thematic suffix (whereas only derived words have derivational suffixes).

That is why we say that in cases like *sůl* 'salt.n' > *solit* 'salt.v' and *běhat* 'run.v' > *běh* 'run.n', word-formation is carried out by the change of paradigm accompanied by changes in inflectional affixes (including the thematic suffix), without addition or deletion of derivational material, that is by conversion.

Because the use of the term *conversion* is not unified in Czech linguistics, in the following Section 2.2.1 we will focus on how it is defined by different authors and where conversion is placed in the system of Czech word-formation. As conversion is generally considered a directional process in Czech, we will also focus on the issue of determining the direction. Finally, because this thesis is concerned with the semantic relation between the verb and the noun in a conversion pair, we will look more closely (in Section 2.2.2) at the different semantic classifications of nouns converted form verbs and verbs converted from nouns available in Czech grammars.

2.2.1. Approaches to conversion

2.2.1.1. Dokulil's approach to conversion

In his 1962 monograph on Czech word-formation *Tvoření slov v češtině 1*, Dokulil (1962) describes the different processes available for creating new words and their place in the system of Czech word-formation. *Conversion* is defined as "word-formation without the use of any specific derivational affixes, merely by transferring the base word into a different paradigm"

(*ibid.*, p. 62). That is, no derivational suffixes or prefixes are added, the means of derivation is "the mere difference between paradigms" (*ibid.*, p. 64). This broad definition includes the formation of a new word from a word belonging to a different word class without the use of derivational affixes, e.g., a noun from a verb (*lovit* 'hunt.v' > *lov* 'hunt.n'), verb from a noun (*lyže* 'ski.n' > *lyžovat* 'ski.v'), verb from an adjective (*černý* 'black' > *černat* 'blacken'), noun from an adjective (*holub* 'pidgeon.n' > *holubí* 'pidgeon.adj') etc., but also word-formation processes which do not include a change of word class, such as the formation of gender counterparts (*choť*.m 'husband' > *choť*.f 'wife', *srna* 'doe' > *srn* 'buck') or aspectual counterparts (*riskovat* 'risk.IPF' > *risknout* 'risk.PF') (*ibid.*, p. 63).

However, in his later works from the 80s, Dokulil's use of the term conversion changes. Specifically, he starts to use it in a narrower sense and refer to some of the processes previously included under conversion as *transflexion*. He newly defines conversion as "a word-class transfer (…) in which the word is adopted into a new word class in its basic form" (Dokulil, 1982b, p. 262), which means that the form of its "basic morphological category (nominative, infinitive) stays the same" (*ibid.*). Among the inflected word classes in Czech, conversion in this new narrower sense basically only covers the substantivisation of adjectives (*nemocný*.adj 'sick' > *nemocný*.n 'a sick person'). The transfer of a word into a new word class accompanied by the change of paradigm reflected in overt inflectional affixes (also in the citation form) is now called *transflexion*, meaning that cases like *lovit* 'hunt.v' > *lov* 'hunt.n' and *lyže* 'ski.n' > *lyžovat* 'ski.v' do not fall under the term *conversion* anymore.

However, the nature of the process is consistently described as derivation without the use of derivational affixes and the creation of nouns from verbs and verbs from nouns in this way is seen as the same process, only with the opposite direction: "As far as the relationship between the base word and the derived word is concerned, there is no fundamental difference between word-formation of the *lovit* 'hunt.v' > *lov* 'hunt.n' type and *sůl* 'salt.n' > *solit* 'salt.v' type. Putting aside the fact that in the first case, the semantic relation between both members of the pair requires us to understand the direction from the verb to the noun, and in the second case from the noun to the verb, in both cases, the derived word differs from the base word only by its inflectional type, its morphological characteristics" (Dokulil, 1962, p. 155).

Dokulil consistently rejects the notion of the zero derivational suffix (Dokulil, 1962, p. 153; 1982, p. 262). Although zero endings are used when talking about inflectional paradigms, he does not consider the zero suffix in derivation to be analogical. Firstly, the relationship between two forms of one word and between a base word and a derived word is not the same – in

derivation, one word is primary, the other secondary. Secondly, the function of the zero inflectional ending is not specific to any one morphological function or any one paradigm (it appears in the nominative singular and accusative singular of certain masculine and feminine nouns and the genitive plural of certain feminine and neuter nouns) and, at the same time, these morphological functions are also expressed by other endings (e.g., the nominative singular can also be expressed by *-a*, *-e*/*ě*, *-o*). Therefore, the zero ending is just one of the possible formal expressions of a category, but has no consequence for the meaning of the category as a whole (Dokulil, 1962, pp. 153–154). But in derivation, it is better to talk about different types of derivation – affixal and non-affixal.

Concerning the direction of conversion, Dokulil clearly differentiates between the genetic point of view, i.e., which word came first historically, and the synchronic point of view, i.e., which word is seen as primary by contemporary speakers. He assumes the possibility of a "two-way motivation" (*ibid.*, p. 238), but with one direction being preferred based on some formal and semantic criteria. The given criteria (*ibid.*, pp. 108–110) are: sound alternations (which are systematic and therefore point to the direction of derivation, e.g., we know that *chůze* 'walk.n' is derived from *chodit* 'walk.v', and not the other way around, because there is no [*z*] > [*ď*] alternation in the system of Czech), semantics (the derived word's meaning can be explained using the base word's meaning), frequency (when the previous criteria cannot be used to clearly decide the direction, there is a tendency to consider the more frequent word as primary), frequency of the word-formative type (how often a certain word-formation model is used in the language, e.g., it seems more likely that the verbs *bláznit* 'act crazy' and *špehovat* 'spy.v' are motivated by the nouns *blázen* 'a crazy person' and *špeh* 'spy.n' than the other way around, because agent nouns converted from verbs are not frequently attested in Czech). Action nouns formed by conversion (e.g., *lov* 'hunt.n', *práce* 'work.n') are always considered to be derived from the verb based on the semantic criterion: "In 'action noun – verb' pairs, the motivation action noun → verb is absolutely impossible, because the meaning of the action noun, an objectively interpreted action, is always an abstraction of action in the basic sense, expressed by the verb." (*ibid.*, p. 108). Action nouns are considered to be the result of *transposition*, a type of word-formation process in which a "phenomenon, usually conceived as a mark dependent on a substance (…) becomes independent of it" (*ibid.*, p. 229). In the case of action nouns, this means that the action is reconceptualized as a substance – action in the basic sense is "isolated and hypostasized" (*ibid.*, p. 45) as action seen as a substance. Dokulil (*ibid.*, p. 229)

calls this "objectivization of action" and does not allow for the opposite process of reconceptualizing an action seen as a substance into an action in the basic conceptualization.

In the word-formation part of *Mluvnice češtiny 1* (Dokulil et al., 1986), a Czech grammar from the 80s which follows Dokulil's conception, there is a slight change in the understanding of the direction of conversion in action nouns. Although in the section about the derivation of nouns, it is explicitly written that "synchronically, we consider all action nouns to be derived from the verb" (*ibid.*, p. 288), even if the direction is the opposite from the genetic point of view, in the section about the derivation of verbs, there is a chapter about the derivation of verbs from action nouns (*ibid.*, p. 416). This process is called "back transposition" (*ibid.*), which means that "if we want to newly express an activity based on an action noun in its primary form, the (back) transposition of an action noun into a verb occurs" (*ibid.*). It is also mentioned that a verb derived from an action noun is often defined using the noun in a light verb construction in dictionaries (e.g., *cestovat* 'journey.v' is defined as 'to make a journey, to be on a journey') (*ibid.*).

Dokulil's definition of conversion (in the broader sense and in the narrower sense) is also cited in a chapter on Czech word-formation (Bozděchová, 2016) in the fourth volume of *Word Formation: An International Handbook of the Languages of Europe*, which is a multi-volume handbook that includes the description and comparison of the word-formation systems of 74 European languages. However, the formation of denominal verbs of the *sůl* 'salt.n' > *solit* 'salt.v' type is not included under conversion, but under *suffixation* – although with a comment explaining that "verbal suffixes differ from other word-formation affixes in that they relate the verb to its conjugation paradigm" (*ibid.*, p. 2886) and therefore it would be more precise to distinguish them from real derivational suffixes.

2.2.1.2. *Velká akademická gramatika spisovné češtiny*

In the word-formation section of a Czech grammar from 2018, called *Velká akademická gramatika spisovné češtiny* (Štícha et al., 2018), the process of conversion is defined quite similarly as in Dokulil's 1962 monograph as a "derivational process in which new words are formed without the use of specific derivational affixes" (*ibid.*, p. 131). Its principle is the change of the morphological characteristics of the base word, which is usually connected with the change of word class.

The formative elements in conversion are inflectional affixes, which take on a secondary role as derivational affixes. This means that in this conception, inflectional affixes (inflectional endings and thematic suffixes) which appear in the citation form of the derived word are called derivational suffixes. This is different from Dokulil's conception, where the only means of word-formation is taken to be the change of paradigm without the use of any derivational affixes. So, although the basic definition seems to be the same as Dokulil's, there is a change in the understanding of the process of conversion. The important word in the definition is the word *specific* ("*specific* derivational affixes"). In this conception, there are derivational affixes used in the process of conversion, but they are not the primary, "specific" derivational affixes, but rather inflectional affixes used as secondary, "non-specific" derivational affixes.

From this, it follows that the zero derivational suffix, which was rejected by Dokulil, is accepted here in cases where a derived noun has a zero inflectional ending in the nominative (e.g., *lovit* 'hunt.v' > *lov* 'hunt.n'), because the zero inflectional ending is understood to have a secondary function as the zero derivational suffix.

The problem with this conception, we believe, is that if we take an inflectional ending to be the derivational suffix, we then have to accept the fact that the derivational suffix does not appear at all in some forms of the word. As an example, we will take the word *záchrana* 'rescue.n', converted from the verb *zachránit* 'rescue.v' by the ending *-a* acting as a derivational suffix, and its inflectional paradigm:

	singular	plural
nominative	*záchran-a*	*záchran-y*
genitive	*záchran-y*	*záchran*-0
dative	*záchran-ě*	*záchran-ám*
accusative	*záchran-u*	*záchran-y*
vocative	*záchran-o*	*záchran-y*
locative	*záchran-ě*	*záchran-ách*
instrumental	*záchran-ou*	*záchran-ami*

We can see that the ending *-a*, considered to also be a derivational suffix, only appears in the singular nominative form of the word, but not in any other form. We can also see that in the

genitive plural form, the ending is expressed by a zero. In our view, it is better to consider the whole set of inflectional endings in the paradigm, i.e., the change of paradigm itself, to be the formative element of conversion, and simply state that there is no derivational suffix at all.

The issue of determining the direction of conversion is only briefly mentioned, along with some examples about the difference between the genetic and synchronic point of view – e.g., the noun *spěch* 'hurry.n' is genetically derived from the verb *spěti* 'proceed, go somewhere', but synchronically it is considered to be converted from the verb *spěchat* 'hurry.v' (*ibid.*, p. 440). We can assume that the synchronic point of view is taken in this grammar. The fact that several pairs of nouns and verbs are classified both as having the V>N and the N>V direction, e.g., *blábolit* 'babble.v' – *blábol* 'babble.n' (*ibid.*, pp. 229, 441), *šklebit* 'grin.v' – *škleb* 'grin.n' (*ibid.*), leads us to believe that the possibility of a two-way motivation is assumed.

2.2.1.3. Bednaříková's approach to conversion

Turning away from Czech grammars, we will now take a look at the conception introduced in a monograph about conversion in Czech called *Slovo a jeho konverze* (Bednaříková, 2009). In accordance with the traditional Czech view, Bednaříková (*ibid.*, p. 147) considers conversion to be a directional morphological process, that is a process in which a new word is created from a base word. The process includes word-class change and its formative element is the change of morphological characteristics (*ibid.*, p. 149). The concept of a zero derivational suffix is rejected, and the process is therefore considered to be non-additive (*ibid.*, pp. 148–149). Because the author defines *derivation* as word-formation by the addition of some derivational material, she does not consider conversion to be a type of derivation.

Conversion is taken to be a type of what is called *word-formative transposition*.[1] This means that it falls under word-formation and serves the onomasiological (naming) function, but is still motivated by syntactic needs (*ibid.*, p. 149). We believe that the claim of syntactic motivation only holds for instances of transposition in Dokulil's sense of the word (see section 2.2.1.1), e.g., for the formation of action nouns which still have the general meaning of action. However, it does not seem tenable to claim that in cases like *sloužit* 'serve' > *sluha* 'servant' (*ibid.*, p. 152) both words have the same meaning, only transferred into a new word class due to syntactic needs (otherwise, we would have to claim the same for other agent nouns like *učitel* 'teacher').

[1] Note that this use of the term *transposition* is different than the use of the term by Dokulil (1962), described in Section 2.2.1.1.

Some words created by conversion seem to clearly perform the function of naming new concepts, without being syntactically motivated.

2.2.2. Semantic classification of V/N conversion in Czech

In this section, we turn to a review of existing semantic classifications of V/N conversion available in Czech grammars. As opposed to English, there are no works on Czech focusing on the semantic classification of this word-formation process specifically. Rather, the classification is included in descriptions of the semantics of deverbal nouns and denominal verbs in general. The two directions of conversion (V>N and N>V) are therefore always treated separately, using different categories.

2.2.2.1 Classification in *Tvoření slov v češtině 2*

In *Tvoření slov v češtině 2* (Daneš et al., 1967), a monograph about the formation of Czech nouns, nouns converted from verbs are classified into the following categories:

- **Agent nouns** (e.g., *blázen* 'crazy person', *bloud* 'fool.n', *špeh* 'spy.n', *plaz* 'reptile'), which are thought to be a marginal word-formative type in Czech (*ibid.*, p. 118). There is however a specific productive group of expressive masculine/feminine nouns with the *-a* ending in their nominative singular form which express a particular type of agent: a person based on their negatively evaluated behaviour, e.g., *šišla* 'person with a lisp', *skuhra* 'person who whines' (*ibid.*, p. 123).
- **Names of instruments** (e.g., *brus* 'grindstone', *lék* 'cure.n', *brzda* 'brake.n', *měna* 'currency'), which are understood to be primarily action nouns which developed the instrumental meaning secondarily. So, although synchronically the instrumental meaning may be the main one because the actional meaning has been weakened or lost completely, it is still "tightly connected to [the process of forming] action nouns and is assessed against its background" (*ibid.*, p. 261). In other words, the action noun developed other meanings through semantic shift, and this can, from the synchronic point of view, manifest as polysemy.
- **Names of results** (e.g., *dar* 'gift.n', *díl* 'portion.n', *náklad* 'load.n', *představa* 'idea'), which are described under the category of names of instruments (under the subgroups of 'nouns with the meaning of instrument and result' and 'nouns with the meaning of instrument, action, and/or result').

- **Action nouns** (e.g., *řev* ‘scream.n’, *kop* ‘kick.n’, *krok* ‘step.n’, *hlt* ‘swallow.n’, *hřích* ‘sin.n’), some of which are further classified into subcategories based on their specific meaning – *řev* ‘scream.n’, into ‘actions accompanied by a specific noise’, *kop* ‘kick.n’ into ‘actions of impact / caused motion’ etc.
- **Names of locations** (e.g., *výmol* ‘pothole’, *závrt* ‘drill.n’), which are only briefly mentioned to, again, be the result of semantic shift from the primary actional meaning.

This categorization reflects the polysemy of nouns converted from verbs. However, it does so rather unsystematically. The basic conception is that the primary meaning of nouns converted from verbs is the meaning of action, and other meanings of instrument, result or location are created from the primary action nouns through semantic shift. In the description of the category of the names of instruments, the nouns are subdivided based on their other meanings, but otherwise, it is necessary to compare different sections of the monograph to find out which meanings each individual noun is assumed to have.

2.2.2.2 Classification in *Mluvnice češtiny 1*

Because it follows Dokulil’s theory of word-formation, the categorization of deverbal nouns in *Mluvnice češtiny 1* (Dokulil et al., 1986) is the same as in *Tvoření slov v češtině 2*. But this grammar also presents a classification of denominal verbs created by conversion, which we will review here.

As we have described earlier in Section 2.2.1.1, this grammar operates with the process of “back transposition” where a verb is semantically motivated by an action noun, and so one semantic category is that of **verbs derived from action nouns**. The verbs mentioned as examples include e.g. *cestovat* ‘journey.v’, *cvičit* ‘exercise.v’, *slíbit* ‘promise.v’, *šepotat* ‘whisper,v’, *baletit* ‘do ballet’, *večeřet* ‘have dinner’ (*ibid.*, p. 416).

The rest of denominal verbs are first divided into two big groups based on the meaning of their motivating nouns (people and living beings vs. inanimate objects, things and phenomena) and then further classified based on paraphrases which describe the semantic relationship between the motivating noun and the motivated verb.

Verbs created from names of people and living beings are divided into these categories (*ibid.*, pp. 406–408):

- ‘**to be N**’ (e.g., *otročit* ‘be a slave’, *bláznit* ‘act crazy’, *včelařit* ‘work as a beekeeper’, *učitelovat* ‘work as a teacher’, *papouškovat* ‘parrot.v’)

- ‘**to become N**’ (e.g., *vlčet* ‘to become wild’, *vítězit* ‘win.v’)
- ‘**to make somebody N**’ (e.g., *hostit* ‘host.v’, *věznit* ‘imprison’, *družit* ‘associate.v’, *mrzačit* ‘cripple.v’)

Verbs derived from names of inanimate objects, things and phenomena are divided into the same three categories as the previous group and seven additional categories (*ibid.*, pp. 409–412):

- ‘**to be, seem or act like N**’ (e.g., *prostředkovat* ‘mediate’)
- ‘**to become N**’ (e.g., *varhanět* ‘wrinkle.v’)
- ‘**to make something N**’ (e.g., *členit* ‘segment.v’, *rosolovat* ‘turn into jelly’, *formovat* ‘form.v’)
- **atmospheric phenomena** (e.g., *sněžit* ‘snow.v’, *časit se* ‘clear out’)
- ‘**to use N as an instrument, provide with N**’ (e.g., *bičovat* ‘whip.v’, *asfaltovat* ‘asphalt.v’, *lyžovat* ‘ski.v’, *argumentovat* ‘argument.v’)
- ‘**to have N**’ (e.g., *cítit* ‘feel.v’, *slavit* ‘celebrate’, *pozorovat* ‘observe’)
- ‘**to emit N**’ (e.g., *svítit* ‘shine.v’, *hovořit* ‘talk.v’, *cválat* ‘gallop.v’)
- ‘**to create, make N**’ (e.g., *plodit* ‘bear fruit’, *linkovat* ‘line.v’)
- ‘**to be located in N, to put in N**’ (e.g., *dolovat* ‘mine.v’, *stanovat* ‘stay in a tent’, *skladovat* ‘store.v’, *pytlovat* ‘bag.v’, *knihovat* ‘book.v’)
- **other** (e.g., *nocovat* ‘spend the night’, *zimovat* ‘spend the winter’, *basovat* ‘sing with a bass voice’, *koledovat* ‘go carol singing’).

Some categories are defined quite narrowly and specifically (e.g., the category of atmospheric phenomena), while some categories are defined extremely broadly and generally (e.g., the category ‘to have N’). It is remarked that that some words have meanings that “compete with other structural meanings” (*ibid.*, p. 411) – however, it is not clear whether this, along with the fact that some verbs are put into two different categories (e.g., *hnízdit* both into ‘to have N’ and ‘to be located in N, to put in N’; *šepotat* both into ‘to emit N’ and verbs derived from action nouns), implies fuzzy boundaries between the defined categories or polysemy of the converted verbs.

2.2.2.3 Classification in *Velká akademická mluvnice češtiny*

The grammar by Štícha et al. (2018) proposes a different way of classifying nouns converted from verbs and verbs converted from nouns. Similarly to the previous conception in *Mluvnice*

češtiny 1, the primary classification is based on formal criteria (with nouns, it is their gender and declension type and prefixed/non-prefixed motivating verb, with verbs it is their conjugation type), some formal types are then also classified into semantic categories which, in the case of N>V conversion, also include some very fine-grained subcategories.

Masculine nouns with a zero ending in the nominative singular derived from non-prefixed verbs are divided into categories based on heterogenous criteria, such as the temporal characteristics of the verb (punctual vs. durative), stylistic factors (register, expressivity), lexical field / type of activity (e.g., sports) or the number of senses. The categories include (*ibid.*, pp. 441–443):

- **names of ongoing activities or actions** (e.g., *běh* 'run.n', *hluk* 'noise.n', *tep* 'pulse.n'),
- **names of short actions (and their completion)** (e.g., *hryz* 'bite.n', *mžik* 'blink.n', *šust* 'rustle.n')
- **colloquial, expressive names of actions or results** (e.g., *blábol* 'babble.n, rubbish', *kec* 'rubbish, rumour', *žvást* 'rubbish, nonsense')
- **names of senses** (e.g., *čich*, 'smell.n', *hmat* 'touch.n', *sluch* 'hearing.n')
- **names of sports disciplines and exercises** (e.g., *dřep* 'squat.n', *hod* 'throw.n', *skok* 'jump.n')
- **names of materialized results of actions** (e.g., *blesk* 'flash of lightning')
- **polysemous nouns**, (e.g., *chlast* 'booze; drinking of alcohol', *lom* 'refraction; quarry.n').

Masculine nouns with a zero ending in the nominative singular derived from prefixed verbs are divided into different categories, although some of them overlap with those for nouns derived from non-prefixed verbs (*ibid.*, pp. 445–450):

- **ongoing action** (e.g., *nácvik* 'training.n', *rozhovor* 'conversation', *zápach* 'smell.n')
- **ongoing or completed action** (e.g., *průlet* 'flying.n through', *návrat* 'comeback.n', *rozpad* 'disintegration')
- **completed action** (e.g., *dotaz* 'question.n', *úlek* 'fright.n', *příslib* 'promise.n')
- **action or the materialized result of action (material entity)** (e.g., *odtok* 'drain.n', *nákup* 'purchase.n', *nátěr* 'coating.n, paint')
- **materialized result of action** (e.g., *dotisk* 'reprint.n', *úkryt* 'hiding.n', *výtvor* 'creation')
- **material entity (object, material or place)** (e.g., *nádor* 'tumour', *průkaz* 'certificate.n', *záklop* 'lid')

- **nouns with an abstract non-actional meaning** (e.g., *nájem* ‘rent.n’, *návyk* ‘habit’, *výraz* ‘expression’)
- **nouns with a generic derivational meaning and specialized lexical meaning** (e.g., *přenos* ‘transmission; broadcast.n’)
- **other special cases** (e.g., *rozvod* ‘divorce.n, *nátlak* ‘pressure.n’, *výhled* ‘view.n’)

Feminine nouns with the *-a* ending in the nominative singular are not explicitly divided into semantic categories, but they can be said to generally fall into the categories defined for masculine nouns (*ibid.*, pp. 452–456).

For both the masculine and feminine nouns, it is noted that most of the nouns are polysemous (*ibid.*, pp. 443–444, 452). Because the classification works with words as lexemes, not with their individual senses, the categories themselves reflect the polysemy – as the conjunction *or* indicates in, for example, ‘action *or* the materialized result of action’, the category is for polysemous nouns with two different meanings.

The categorization of verbs converted from nouns is, again, primarily based on formal criteria. Verbs are first divided into groups based on their thematic suffix, and then classified based on their semantic relation to the motivating noun. The same categories are used for all suffixes, but the less productive ones (*-a-*, *-e/ě-*, *-nou-*) only express some of them. There are 11 categories, some of which are further divided into several subcategories (which we do not review here) based on fine meaning differences as well as formal, semantic and stylistic characteristics of the motivating noun. The main 11 categories include (*ibid.*, pp. 227–236):

- **verbs expressing identity** (*sousedit* ‘neighbour.v’, *hostovat* ‘be a host’)
- **verbs expressing behaviour/relationships following from the N** (*bláznit* ‘act crazy’, *papouškovat* ‘parrot.v’)
- **verbs expressing professional or other activity of the N** (*farářovat* ‘be a parish priest’)
- **verbs expressing feelings or external expressions** (*potit se* ‘sweat.v’, *šklebit se* ‘grin.v’, *bouřit* ‘storm.v’)
- **verbs expressing the carrying out of an activity** (*tancovat* ‘dance.v’)
- **verbs expressing change of outer characteristics** (*hrudkovat se* ‘clump.v’)
- **verbs expressing an action based on its result** (*čárovat* ‘line.v’, *básnit* ‘write poems’)
- **verbs expressing action based on the affected object** (*čajovat* ‘drink tea’, *plachtit* ‘sail.v’, *koulovat* ‘have a snowball fight’)

- **verbs expressing the meaning of 'to provide/cover with N'** (*hnojit* 'fertilize', *dekretovat* 'decree.v', *datovat* 'date.v')
- **verbs expressing action based on the instrument** (*bandážovat* 'bandage.v', *lyžovat* 'ski.v', *clít* 'declare at customs')
- **verbs expressing action/activity based on its circumstances** (*brodit se* 'wade.v', *čundrovat* 'hike.v', *nocovat* 'spend the night', *členit* 'segment.v', *nořit se* 'dive in', *frázovat* 'phrase.v', *cévkovat* 'catheterize').

In contrast to the classification of nouns derived from verbs, the polysemy of the verbs converted form nouns is not directly commented upon.

The aim of going through the semantic classifications of V>N and N>V conversion in Czech grammars was to review the existing approaches to this issue and evaluate them, taking note of potential problems which may arise when attempting to create such a classification. We have seen that the classifications used in *Tvoření slov v češtině 2* and *Mluvnice češtiny 1* on the one hand, and *Velká akademická gramatika spisovné češtiny* on the other are very different, and that they are also not directly comparable to the existing semantic classifications of V/N conversion in English (described in Section 2.1.3). But despite their differences, some categories based on some similar concepts, such as ACTION, RESULT, LOCATION etc., seem to surface in both of them.

3. Methodology

3.1. Method

The approach to semantic classification of V/N conversion in this thesis is directly influenced by the accounts of conversion as metonymy. However, as we have already discussed in Section 2.1.2, the term *metonymy* is usually used to describe the relationship between different senses of a polysemous word (e.g., between *whisk*.n 'action of whisking' and *whisk*.n 'instrument used for whisking'), not between a motivating word and a motivated word in word-formation (e.g., between the senses of *whisk*.v and *whisk*.n). We consider conversion to be a word-formation process where new words are created, not only new senses of the same word. The majority view seems to be not to include word-formation under metonymy, and in this thesis, we do not want to argue against it and use the term more broadly than is usual. We believe that it is important to recognize that the relationships between words in word-formation and between different senses of a polysemous word are two different phenomena but, at the same time, to stress that there are similar conceptual relations underlying both of them.

In this thesis, we aim to classify the semantic relation between the motivating word and the motivated word in a V/N conversion pair in terms of conceptual relationships in different types of cognitive event schemata. We will take up Kövecses and Radden's (1998) claim that the semantic relations underlying V>N and N>V conversion are the same ones, only with the direction reversed. A non-directional classification is therefore possible if we only specify which schema is denoted by the verb and which element is denoted by the noun, regardless of the direction of the process of conversion.

As we have seen, the types of schemata assumed to underly V/N conversion are different in works by different authors. We choose to rely on a list of event schemata given in *Cognitive English Grammar* (Radden & Dirven, 2007), taking it as an appropriate representative text to be used as a point of departure for the analysis. There are the following 10 event schemata described (*ibid.*, pp. 272–299): **occurrence schema**, **location schema**, **motion schema**, **possession schema**, **emotion schema**, **perception/cognition schema**, **action schema**, **self-motion schema**, **caused-motion schema** and **transfer schema**. In the following paragraphs, we will describe them in more detail and provide a visual representation for each of them.

The first 4 schemata (**occurrence**, **location**, **motion**, **possession schema**) belong to the "material world" which is the "world of entities as they exist, change or undergo processes" and does not include human agents' intentional actions affecting these entities (*ibid.*, p. 272).

The **emotion schema** and **perception/cognition schema** belong to the "psychological world" which is "the internal world of people's sensations, emotions, perceptions and thoughts" (*ibid.*). The remaining schemata (**action**, **self-motion**, **caused-motion**, **transfer schema**) belong to the "force-dynamic world" which is the "world of action, force, and cause and their effects" where human agents carry out intentional actions (*ibid.*).

Each event schema represents a different type of situation characterized by a different set of participants. The **occurrence schema** represents a situation where an entity (= the THEME) is in a certain state or undergoes a certain process (not caused by an intentionally acting AGENT) (*ibid.*, p. 272). The process can be steady or include a change of state and therefore lead to a RESULTING STATE (*ibid.*, p. 274). These types of the occurrence schema are visually represented in Figures 1, 2 and 3:

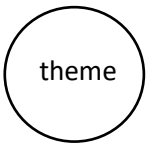

Figure 1: Occurrence schema – state.

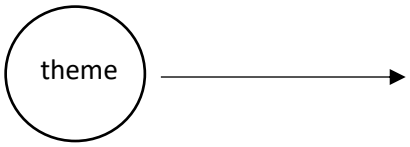

Figure 2: Occurrence schema – steady process.

Figure 3: Occurrence schema – change of state.

The **location schema** represents a static situation in which an entity (= the THEME) is situated in a certain LOCATION (*ibid.*, p. 276), as represented by Figure 4:

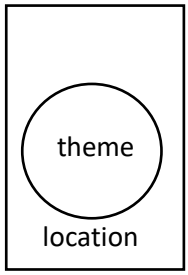

Figure 4: Location schema.

The **motion schema** represents a dynamic situation in which an entity (= the THEME) moves from one location (= the SOURCE) to another (= the GOAL) through a certain PATH, cf. Figure 5. The motion is not caused by an intentionally acting AGENT, rather the THEME moves on its own, as in *The bottle rolled down the slope.* (*ibid.*, p. 278).

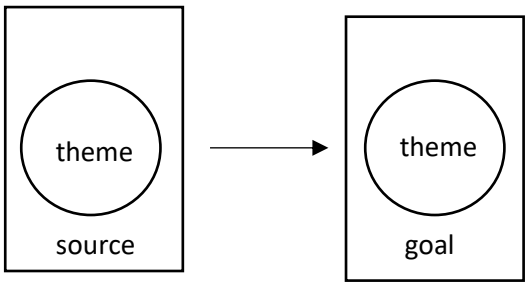

Figure 5: Motion schema.

The **possession schema** represents a situation in which an entity, typically a human, (= the POSSESSOR) possesses another entity (= the THEME) (*ibid.*, p. 279), cf. Figure 6.

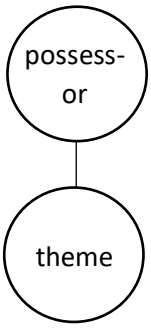

Figure 6: Possession schema.

The **emotion schema** represents a situation in which a sentient being (= the EXPERIENCER) experiences an EMOTION triggered by certain CAUSE, cf. Figure 7. EMOTION is a psychological state characterized by a low degree of the experiencer's control and a high degree of impact of the external stimulus (*ibid.*, p. 282).

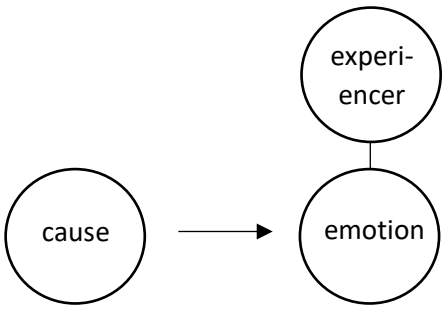

Figure 7: Emotion schema.

The **perception/cognition schema** represents a situation in which a sentient being (= the EXPERIENCER) is perceptually aware of a thing (= the PERCEPT/CONCEPT), such as in the

situations represented by sentences *I see the mountains.* and *I see your point.* (*ibid.*, pp. 283–284), cf. Figure 8:

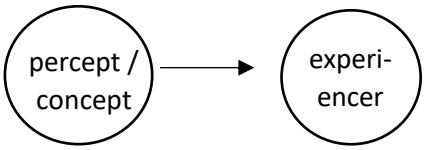

Figure 8: Perception/cognition schema.

The **action schema** represents a situation in which "a human agent deliberately and responsibly acts upon another entity, the theme" (*ibid.*, p. 284), typically using an instrument. In cognitive linguistics, a prototypical action is typically described using the "energy chain" metaphor in which an "energy source" (= the AGENT) transmits energy to the "energy sink" (= the THEME) through "energy transmitters" (= a BODY PART, an INSTRUMENT) (*ibid.*, p. 285). Situations in which the theme is affected but also created are included under the action schema (*ibid.*, p. 286). When the entity is created by the AGENT's action, we call it the RESULT, when it is only affected by the AGENT's action, we call it the THEME. The two types of situations represented by the action schema are visually represented in Figure 9:

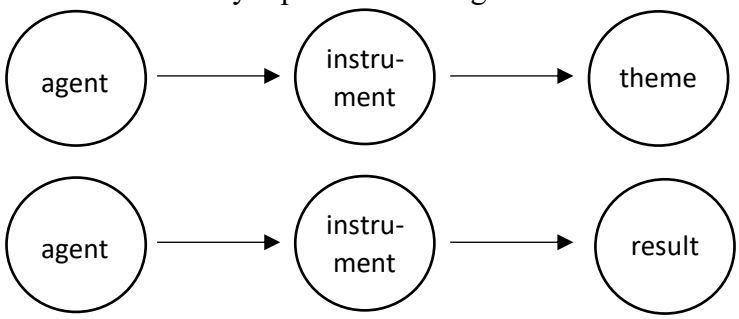

Figure 9: Action schema.

The **self-motion schema** represents a situation in which an AGENT instigates their own motion from one location (= the SOURCE) to another (= the GOAL) through a certain PATH, cf. Figure 10. It can be illustrated, for example, by the sentence *Our friends went to Rome* (*ibid.*, p. 291).

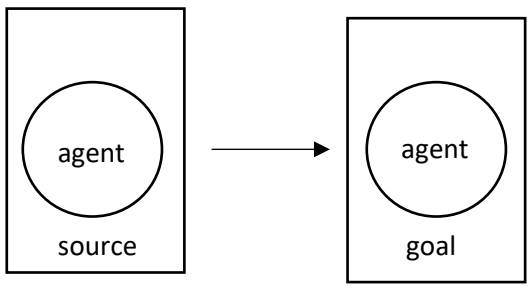

Figure 10: Self-motion schema.

The **caused-motion schema** represents a situation in which "an energetic force, typically a human agent, brings about the motion of a thing to or from a location" (*ibid.*, p. 292), that means the thing (= the THEME) is moved from a SOURCE location to a GOAL location through a certain PATH by an intentionally acting AGENT, as in the sentence *Santa Claus puts sweets in children's stockings.* (*ibid.*). This situation is visually represented in Figure 11:

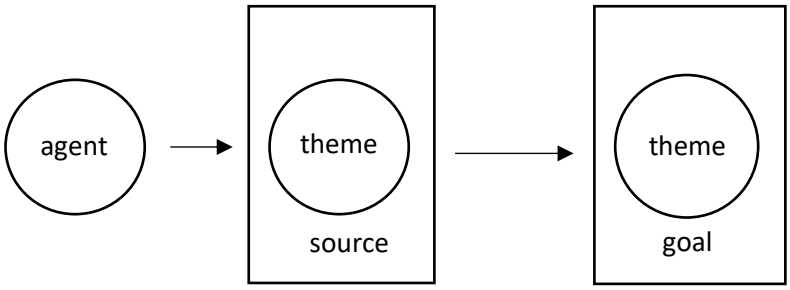

Figure 11: Caused-motion schema.

The **transfer schema** represents a situation in which an AGENT gives/transfers something (= the THEME) to a RECIPIENT, as in the sentence *Phil gave his wife everything.* (*ibid.*, p. 294), i.e., a transfer of possession between a previous owner and a new owner takes place, cf. Figure 12. Both physical and abstract transfer are represented by this schema, which means that for example situations of communication and transfer of information are included as well (*ibid.*, p. 295).

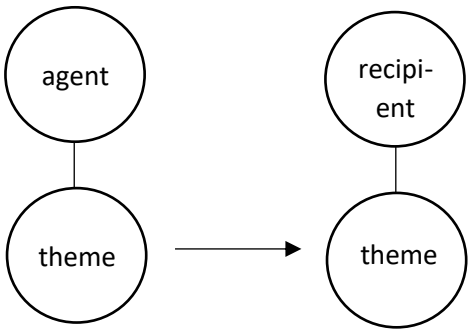

Figure 12: Transfer schema.

Along with the participants, non-participant elements can be present in the schemata, such as MANNER, LOCATION, TIME etc. (*ibid.*, p. 271).

We will use these event schemata to classify the types of semantic relations between a noun and a verb in a conversion pair, assuming that the verb denotes the event schema and the noun denotes one of its elements. So, for example, in *axe*.n – *axe*.v, *lis* 'press.n' – *lisovat* 'press.v', the noun denotes the INSTRUMENT and the verb denotes the 'action schema', in *waitress*.n – *waitress*.v, *brigádník* 'part-time worker' – *brigádničit* 'work part time', the noun denotes the AGENT and the verb denotes the 'action schema', in *bench*.n – *bench*.v, *láhev* 'bottle.n' – *lahvovat* 'bottle.v', the noun denotes the GOAL and the verb denotes the 'caused-motion

schema', etc. The exact labels and the method used to assign them to the conversion pairs in the data is described in Section 3.3.

There are also frequent cases where the noun denotes the event itself, e.g., *chat*.n, *swim*.n in *have a chat*, *go for a swim*. We assume that in these cases, the noun denotes the event schema as a whole, but that the schema is reconceptualised as a substance. This is described by Langacker (1987, p. 22) as "conceptual reification". He explains that the verb is characterized by sequential scanning which unfolds in time, whereas the noun profiles the set of entities involved in the event all at once and so designates a single episode of what is denoted by the verb. He uses the following visual representation, which we show here as Figure 13, to demonstrate this process:

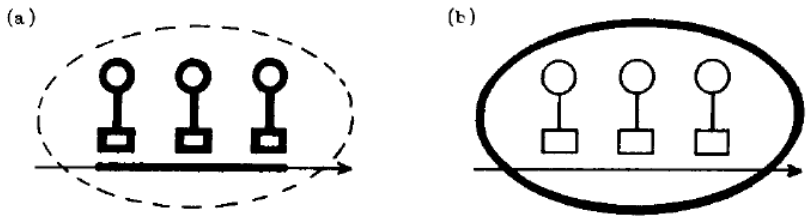

Fig. 1.3

Figure 13: Conceptual reification. Taken from Langacker (1987, p. 24).

This "conceptual reification" is basically what Dokulil (1962, p. 108) calls "transposition", which, in the case of action nouns, is described as a "reassessment" (*přehodnocení*, Dokulil, 1962, p. 43) of the basic conceptualization of an action. Basically, this is a difference in the *construal* of the action (cf. Schönfeld, 2005, p. 143). We describe this type of relation between the verb and the noun as the relation between ACTION (/PROCESS) and INSTANCE OF ACTION (/PROCESS) (following Martsa, 2013).

An issue with the type of conversion where both the noun and the verb denote the whole event schema is the question of whether the "verbal" conceptualization is always primary, i.e., the direction of conversion is always V>N, or whether the opposite (N>V) direction is also possible. We have seen in Sections 2.1.3 and 2.2.2 that authors usually do accept the idea that both directions are possible (cf. Plag's (1999) "performative" category for English N>V conversion or Štícha's (2018) "verbs expressing the carrying out of an activity" category for Czech N>V conversion), although for example Dokulil (1962, p. 229) sees the V>N direction as the only possibility in these cases. In her study of Czech conversion pairs where both the noun and the verb denote an action, Ševčíková (2021) demonstrates that there are frequent cases of the N>V direction, especially in conversion pairs with foreign roots, by looking at different

criteria for determining the direction of conversion, such as the strategies of forming aspectual counterparts of the verbs, the relative frequency of the noun and the verb, and the frequency of light-verb constructions including the noun. In our analysis, we also work with both N>V and V>N direction in these cases.

We want to emphasise that although the same event schemata and their elements are assumed to underlie both V>N and N>V conversion, and therefore a non-directional analysis of the resulting pairs is possible, the *process* of conversion is different in each direction with regards to the semantic change that happens between the motivating word and the motivated word. In V>N conversion, the motivating verb's meaning includes the whole event schema, i.e., the whole situation with all of its elements, and one of the elements (or the event schema as a whole) is profiled (Langacker, 1987, p. 25) and, as a result, denoted by the noun. In contrast, in N>V conversion, the motivating noun's meaning does not include an event schema – we do not assume (as opposed to, for example, Farrell, 2001) that the different possible events in which the entity denoted by the noun can be a participant are a part of the conceptual structure of the noun's meaning. Rather, the entity denoted by the noun is placed into an event schema only during the process of word-formation (based on the type of event we want to name, which usually reflects the canonical use (/behaviour etc.) of the entity denoted by the noun, and this we assume to be a part of our encyclopaedic knowledge). This is what Langacker (1987, p. 25) describes when he states that "the derivation of a verb from a noun is generally accompanied by the addition of conceptual content", as opposed to the derivation of nouns from verbs. Whereas the verb's meaning already includes the event's participants and the noun can therefore be derived by merely profiling one of them, the noun is "conceptually autonomous: we can normally conceptualize its designatum without conceiving of its participation in any higher-order process" (*ibid.*).

We assume that not all event schemata and not all elements of the schemata are utilized in conversion to the same degree. Different types of verbs in conversion pairs denote different event schemata, and different nouns in conversion pairs denote different elements of the schemata. The main question that we ask in this thesis is which elements of event schemata are denoted by the nouns in Czech and English V/N conversion, and how frequently. The main aim of the thesis is to then compare how English and Czech differs in this aspect.

When we analyse the semantic relations between nouns and verbs in conversion pairs, it is important to account for polysemy. For example, the converted noun often has different senses, each denoting a different element of the event schema, e.g., the noun *rewrite*.n, which is

converted from the verb *rewrite*.v denoting the 'action schema', can mean the action of rewriting (INSTANCE OF ACTION), the result of rewriting (RESULT) and the person engaged in rewriting (AGENT).[2] In this case, we do not only analyse the semantic relation between the verb and the meaning of the noun that is thought to be primary in the process of word-formation (which in this example would be the INSTANCE OF ACTION meaning), but the relations between all the meanings of the noun and the verb in the conversion pair.

The direction of conversion can also be different for different senses of the noun or verb, as has been pointed out by Plank (2010). For example, the verb *ballot*.v in the sense of 'to give a vote by ballot' is converted from the noun *ballot*.n in the sense of 'a small coloured ball placed in a container to register a secret vote; (hence, by extension) a ticket, paper, etc., so used' (the noun denotes the INSTRUMENT in the 'action schema' of the verb). However, the noun also has the sense of 'a round of voting', which has been converted from the verb (and denotes an INSTANCE OF ACTION).[3]

It is therefore important to carry out the analysis on the level of individual senses of the converted words, rather than the words as whole lexemes. We explain how exactly this is done in Section 3.3. This approach allows us to examine the patterns of multiple semantic relations which may exist in a single conversion pair. We will look at which types of semantic relations often appear together in one conversion pair and compare these patterns in English and Czech.

This way of looking at the semantic relations in V/N conversion pairs, which is based on underlying conceptual schemata, is meant to provide a classification which: 1) is cognitively based and provides a constant level of abstraction across the postulated categories, 2) allows us to classify both V>N and N>V conversion using the same set of categories, 3) accounts for potential multiple semantic relations existing between the verb and the noun in one conversion pair, and 4) is applicable across different languages, allowing us to compare how frequently different semantic relations occur in Czech and English conversion.

3.2. Data selection

Our aim in this thesis is to carry out a corpus-based comparison of the semantic diversity of English and Czech V/N conversion pairs. Therefore, we first have to extract a list of V/N

[2] This is based on the definitions in the *Oxford English Dictionary* ("rewrite, n. and adj.". *OED Online*. Oxford University Press. https://www.oed.com/viewdictionaryentry/Entry/165056 (accessed October 02, 2021).
[3] "ballot, n.1". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/14988?rskey=YDdael&result=1&isAdvanced=false (accessed October 02, 2021).

conversion pairs in English and Czech. We used the *British National Corpus* (hereafter *BNC*) for English and *SYN2015* (Křen et al., 2015) for Czech, both accessed through the *Kontext* interface provided by the Czech National Corpus. *BNC* is a 100-million corpus of British English containing 90% written and 10% spoken texts. *SYN2015* is a 100-milion corpus of contemporary Czech containing written texts from three genres: journalism, fiction and non-fiction, all three areas being represented equally.

The fact that the verb and noun in an English conversion pair are formally identical in their citation forms made it possible to extract the conversion pairs in English automatically. First a list of lemmas tagged as a verb and a list of lemmas tagged as a noun were obtained, and subsequently both lists were compared and those lemmas which appeared in the corpus with both tags were selected. Out of the resulting list containing 16 176 pairs, we excluded items appearing only once in the corpus, items containing non-alphabetical signs, and items shorter than 3 letters. The resulting list had a total of 8 859 pairs. However, it still contained incorrectly tagged lemmas, such as abbreviations (e.g., *OALDCE*) wrongly tagged sometimes as a noun, sometimes as a verb, nouns wrongly tagged as a verb (e.g., *skincare*) and verbs wrongly tagged as a noun (e.g., *heal*). Because the extraction was fully automatic, the list also contained some V/N pairs which satisfied the condition of identical citation form, but in which neither the verb was formed from the noun, nor the noun was formed from the verb (as determined using the *OED*), e.g., *treble*, where both the verb and the noun are formed from the adjective,[4] or *overwork*, where the verb is formed by prefixation from *work*.v and the noun is formed by prefixation from *work*.n[5]. We kept pairs which include stress shift (e.g., ˈ*torment*.n – *torˈment*.v) in the data sample. The list was not manually cleaned as a whole, the errors were removed only after a smaller sample was selected for analysis.

The extraction of Czech V/N conversion pairs was more challenging because the noun and the verb in a Czech conversion pair are not formally identical. The verbs' citation forms contain one of 6 possible thematic suffixes (*-nu-*, *-ě/e-*, *-i-*, *-a-*, *-ova-*, -0-) plus the infinitive ending *-t*, and the nouns' citation forms contain one of 6 possible inflectional endings (*-a*, *-e*, *-ě*, *-o*, *-y*, -

[4] "treble, v." *OED Online*. Oxford University Press. www.oed.com/view/Entry/205398 (accessed December 21, 2021).
"treble, n.". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/205396 (accessed December 21, 2021).
[5] " overwork, v.". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/135388 (accessed December 21, 2021).
"overwork, n.". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/135387 (accessed December 21, 2021).

0). In addition, several types of sound alternations are frequently employed in Czech V/N conversion. Therefore, several different queries had to be used to cover all possible combinations of these. The tool which we used to extract the conversion pairs in this way was *Morfio* (Cvrček & Vondřička, 2013) – an online application provided by the Czech National Corpus for looking up derivationally related words by allowing the user to search for word pairs that differ only in a specified way. It allows the user to specify a string which both words have in common and a string (or strings) in which they differ using regular expressions. It is also possible to specify both words' morphological tags and possible sound alternations in the part that they have in common.

Therefore, it is possible, for example, to formulate a query searching for a pair of a noun and a verb beginning with a common string with the length of 3 or more characters and ending differently in such a way that in the noun's ending there is an *a* where the verb has two (further unspecified) characters: https://morfio.korpus.cz/6YpQIfnN. This query captures V/N conversion pairs where the noun ends in *-a* and the verb ends in *-ě/ě-t*, *-a-t* or *i-t* (such as *nápověda* 'hint.n' – *napovědět* 'hint.v', *pitva* 'dissection' – *pitvat* 'dissect', *ochrana* 'protection' – *ochránit* 'protect'). A series of queries like this was carried out so that all possible combinations of verb and noun endings were captured. The allowed sound alternations were:

- *a*/*á* (*nálož* 'load.n' – *naložit* 'load.v')
- *e*/*é* (*oblek* 'dress.n' – *obléknout* 'dress.v')
- *i*/*í* (*přítěž* 'burden.n' – *přitížit* 'burden.v')
- *u*/*ú* (*únava* 'tiredness' – *unavit* 'tire')
- *y*/*ý* (*analýza* 'analysis' – *analyzovat* 'analyze')
- *ou*/*u* (*vstup* 'entrance' – *vstoupit* 'enter')
- *í*/*ě* (*díra* 'hole' – *děrovat* 'make holes')
- *ů*/*o* (*hrůza* 'terror' – *hrozit* 'threaten')
- *e*/0 (*buben* 'drum.n' – *bubnovat* 'drum.v')
- *d*/*ď* (*zpověď* 'confession' – *zpovídat* 'confess')
- *h*/*ž* (*dluh* 'debt' – *dlužit* 'owe')
- *ch*/*š* (*strach* 'fear' – *strašit* 'frighten')
- *k*/*č* (*tlak* 'pressure.n' – *tlačit* 'pressure.v')
- *n*/*ň* (*báseň* 'poem' – *básnit* 'write poems')
- *r*/*ř* (*jiskra* 'sparkle.n' – *jiskřit* 'sparkle.v')
- *t*/*ť* (*drť* 'crumble.n' – *drtit* 'crumble.v').

The resulting list contained some pairs which satisfied the formal requirements of the query, but were not conversion pairs, e.g., *poník* 'pony' – *poničit* 'damage.v', where the formal similarity is purely accidental, or **narda* – *naředit* 'dilute', which contained mistakes in morphological tagging (**narda* was wrongly tagged because of an accidental space between two parts of the word *Leonarda*). There were also words which are etymologically related, but the semantic link between them is opaque in today's Czech, e.g., *národ* 'nation' – *narodit* 'be born'. The pairs which did not contain actual V/N conversion pairs formed a large part of the extracted data. Therefore, we went through all the data and manually selected the actual conversion pairs. The pairs with only an etymological relation received a special tag and were not included in the analysed sample. Also, some pairs included an aspectual counterpart to a verb already paired with the same noun in another pair, e.g., *vznik* 'creation, origin' – *vznikat* 'originate.IPF', *vznik* 'creation, origin' – *vzniknout* 'originate.PF'. These pairs were joined into one pair in which the noun has both the perfective and imperfective verb as its conversion counterpart (*vznik* 'creation, origin' – *vznikat*/*vzniknout* 'originate.IPF/PF').[6] The resulting clean list contained a total of 2 035 V/N conversion pairs.

After extracting the lists of conversion pairs from the corpora, a random sample (obtained using the RAND function in Excel) of 300 in each language was selected for further analysis. In the case of the English data, the manual cleaning process was only carried out on this smaller sample – the incorrectly tagged pairs, as well as pairs described as slang or dialect in the *OED* (e.g., *burble*,[7] *cosh*[8]) were removed and replaced by other randomly selected conversion pairs.

3.3. Data annotation

Our goal is to examine the semantic relations between the nouns and verbs in the conversion pairs, which we model as the relations between event schemata and their elements. Therefore, we manually annotated the resulting lists of 300 V/N conversion pairs in each language using the event schemata from *Cognitive English Grammar* (which we described in Section 3.1). Each pair was labelled with the event schema that underlies the verb's meaning (**action**, **caused-motion**, **cognition**, **emotion**, **motion**, **occurrence**, **perception**, **self-motion** or **transfer**

[6] For reasons of simplicity, we consider the semantic relation to exist between the noun and both aspectual counterparts of the verb, although the purely grammatical nature of aspect is a problematic issue – aspectual counterparts may also be treated as separate lexemes and their creation included under word-formation, and the noun in a conversion pair may be assumed to be motivated by one of the aspectual counterparts only.
[7] "burble, v.2". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/24877 (accessed December 21, 2021).
[8] "cosh, n.3". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/42186? (accessed December 21, 2021).

schema) and with the element of the given schema expressed by the noun (e.g., AGENT, THEME, RESULT, INSTRUMENT, SOURCE, PATH, GOAL etc.). If the noun had an actional meaning, i.e., it denoted the whole event schema, it was annotated as INSTANCE OF ACTION. Analogically, if the noun denoted the whole event schema of a process, it was annotated as INSTANCE OF PROCESS. The list of schemata and their elements used in our data at least once is given in Table 2.

Schema	Element	Example from English and Czech
action	AGENT	*waitress*; *brigádník* 'part-time worker' – *brigádničit* 'work part time'
	DEGREE	*lick*; *hlt* 'the amount of liquid that it is possible to swallow' – *hltat* 'swallow.v'
	INSTANCE OF ACTION	*abuse*; *balet* 'ballet' – *baletit* 'do ballet'
	INSTRUMENT	*axe*; *lis* 'press.n' – *lisovat* 'press.v'
	LOCATION	*table*; *stan* 'tent' – *stanovat* 'stay in a tent'
	MANNER	*dance*; *sloh* 'style' – *složit* 'compose'
	POSSIBILITY OF ACTION	*výběr* 'the possibility to choose, a selection' – *vybrat* 'choose'
	RESULT	*wrinkle*; *mošt* 'juice.n'- *moštovat* 'make juice'
	THEME	*mushroom*; *cumel* 'candy' – *cumlat* 'suck.v'
	TIME	*season*; *noc* 'night' – *nocovat* 'to spend the night'
caused-motion	AGENT	*sweep*
	DEGREE	*sprinkle*
	GOAL	*bench*; *láhev* 'bottle.n' – *lahvovat* 'bottle.v'
	INSTANCE OF ACTION	*transplant*; *posun* 'movement' – *posunovat*/*posunout* 'move.v'
	MEANS	*ship*; *vůz* 'carriage' – *vozit*/*vézt* 'carry, drive'
	PATH	*curve*; *splav* 'sluice' – *splavovat*/*splavit* 'cause to move downstream'
	RESULT	*sprinkle*; *vsyp* 'poured in lyaer' – *vsypat* 'pour in'
	THEME	*crown*; *sůl* 'salt.n' – *solit* 'salt.v'
cognition	CONCEPT	*purpose*; *výmysl* 'invention' – *vymyslet* 'invent'
	EXPERIENCER	*witness*
	INSTANCE OF ACTION	*rethink*
	INSTRUMENT	*mind*; *mysl* 'mind.n' – *myslet* 'think'
emotion	EMOTION	*panic*; *pocit* 'feeling' – *pociťovat*/*pocítit* 'feel.v'
	CAUSE	*want*
motion	DEGREE	*sweep*; *průnik* 'intersection' – *pronikat*/*proniknout* 'penetrate'
	GOAL	*top*; *směr* 'direction' – *směřovat* 'be directed, have a direction'
	INSTANCE OF PROCESS	*ebb*; *zákmit* 'oscillation' – *zakmitat* 'oscillate'
	PATH	*meander*; *výtok* 'issue, the place through which water flows out' – *vytékat*/*vytéct* 'flow out'
	RESULT	*jut*; *výtok* 'outflow, discharge' – *vytékat*/*vytéct* 'flow out'
	THEME	*bowl*
occurrence	INSTANCE OF PROCESS	*fester*; *záblesk* 'flash.n' – *zablesknout* 'flash.v'
	LOCATION	*border*
	MANNER	*look*

	RESULT	*bloom*; *zámrz* 'ice.n' – *zamrzat*/*zamrznout* 'freeze'
	THEME	*tower*; *soused* 'neighbour' – *sousedit* 'be a neighbour'
perception	INSTANCE OF ACTION	*look*; *průhled* 'look.n through' – *prohlédnout* 'look.v through'
	PATH	*průhled* 'opening through which one can look out' – *prohlédnout* 'look.v through'
	PERCEPT	*chill*; *žízeň* 'thirst' – *žíznit* 'be thirsty'
	POSSIBILITY OF ACTION	*výhled* 'view' – *vyhlédnout* 'look out'
self-motion	AGENT	*trudge*; *poskok* – *poskakovat*/*poskočit*
	DEGREE	*inch*; *dolet* 'maximum distance that a plane is able to fly' – *doletět*/*dolétnout* 'fly.v'
	GOAL	*dive*; *směr* 'direction' – *směřovat* 'be directed, have a direction'
	INSTANCE OF ACTION	*cruise*; *šplh* 'climb.n' – *šplhat* 'climb.v'
	MANNER	*walk*; *přístup* 'approach.n' – *přistupovat*/*přistoupit* 'approach.n'
	MEANS	*skateboard*
	PATH	*by-pass*; *nájezd* 'connecting lane' – *najíždět* 'drive.v'
	POSSIBILITY OF ACTION	*access*; *přístup* 'access.n' – *přistupovat*/*přistoupit* 'access.v'
transfer	AGENT	*guarantee*; *garant* 'guarantee.n' – *garantovat* 'guarantee.v'
	INSTANCE OF ACTION	*feed*; *nápomoc* 'help.n' – *napomáhat*/*napomoci* 'help.v'
	INSTRUMENT	*lease*
	THEME	*award*; *hlas* 'vote.n' – *hlasovat* 'vote.v'

Table 2: Event schemata and their elements used in data annotation.

If we compare the descriptions and visual representations of event schemata in Section 3.1 and the labels actually used in our data, we can see that some elements which we use in annotation do not appear in the description and visual representation of the schemata. This is because along with the core (participant) elements of the schemata, other (non-participant) elements can be present (e.g. LOCATION, MANNER, DEGREE etc.). In some cases, the noun also does not denote the ACTION as such, but the POSSIBILITY OF ACTION. We have also frequently come across some types of motion having a RESULT in our data (e.g., *issue*.v – *issue*.n 'a substance that is issued, discharge', *sprinkle*.v – *sprinkle*.n 'a sprinkled pattern'), transfer having an INSTRUMENT (this concerns legal instruments, such as *lease*.v – *lease*.n), and in one Czech pair, the noun denotes the PATH in the verb's 'perception schema': *průhled* 'opening through which one can look out' – *prohlédnout* 'look.v through'.

Table 2 also shows that we did not use the 'location schema' and 'possession schema' in our annotation, as these two schemata are mostly limited to the verb *be* used in its locative sense and the verbs *have* used in its possessive sense, respectively.

3.3.1 Dealing with polysemy

The nouns and verbs are mostly polysemous. Although we do not classify the relation between the nouns and the verbs' individual lexical meanings, but the relation between their meanings categorized into the general cognitive categories (i.e., the event schemata and their elements), even on this level of abstraction there is still often more than one semantic relation in one single conversion pair. Therefore, one conversion pair can have more than one label. We will demonstrate what this means on concrete examples in the following paragraphs.

We do not annotate all the nouns and verbs' separate senses given in the dictionary, because our categorization is more coarse-grained. We assign multiple semantic labels only where the polysemy leads to multiple different relations between an event schema and its elements. So, for example, we do not have 7 different labels for all the 7 senses of *abuse*.n given in the *OED*, but only one, because all the senses only denote an INSTANCE OF ACTION of the 'action schema' of *abuse*.v. Although the noun is polysemous and can mean improper usage generally or in several specialized areas (misuse of drugs, misuse of notation, use of insulting language, sexual assault or physical/emotional maltreatment), on the level of generalization given by the event schema, all the specialized meanings still fall under the category of INSTANCE OF ACTION. In our classification, we do not reflect all the different shades of meaning, nor the degree of semantic inheritance of the converted word (i.e., whether there is a relation between all senses of the motivating and the motivated word, or only between some of them). The relationship between senses of *abuse*.v and *abuse*.n in the dictionary and their categorical meanings as described by event schemata and elements is demonstrated in Table 3 on the following page.

abuse					
verb			noun		
senses in *OED*		event schema	senses in *OED*		event schema element
1.	a. "To use (something) improperly, to misuse; to make a bad use of; to pervert; to take advantage of wrongly." b. obsolete c. obsolete d. "To use (alcohol, etc.) excessively; to use (a drug) without medical justification."	action	1.	"Improper usage; a corrupt practice or custom; esp. one that has become chronic."	INSTANCE OF ACTION in an action schema
2.	obsolete	–	2.	a. "Wrong or improper use (of something), misuse; misapplication; perversion." b. obsolete c. "The non-therapeutic or excessive use of a drug; the misuse of any substance, esp. for its stimulant effects." d. "abuse of notation; a use of notation which, although formally incorrect, is considered convenient or intuitive while being unlikely to cause errors or confusion."	INSTANCE OF ACTION in an action schema
3.	a. "To misuse the confidence of (someone); to betray (a person's trust, confidence, etc.); to mislead; to cheat, to deceive." b. obsolete		3.	obsolete	–
4.	"To inflict a sexual act regarded as illicit or unnatural (such as fornication, incest, sodomy, etc.) on (a person); to assault (esp. a woman or child) sexually; to violate, rape. Also reflexive: to behave in a licentious manner; (in later use) to masturbate."	action	4.	obsolete	–
5.	obsolete	–	5.	"Contemptuous or insulting language; reviling, scurrility."	INSTANCE OF ACTION in an action schema
6.	"To mistreat (a person or thing); to injure, hurt; to wrong."	action	6.	a. "Sexual violation, esp. rape; sexual assault or maltreatment (esp. of a woman or child)." b. "Physical or mental maltreatment; the inflicting of physical or emotional harm or damage."	INSTANCE OF ACTION in an action schema
7.	"To speak insultingly or unkindly of or to (a person); to malign, revile, vilify (a person or thing)."	action	7.	obsolete	–
8.	"To subject a person (esp. a woman or child) to physical, sexual, or emotional abuse."	action			

Table 3: Dictionary senses vs. categorical semantic relations of *abuse*.v – *abuse*.n.

However, it often happens that the noun's different senses denote different elements of the verb's schema, cf. the case of *rewrite*.v – *rewrite*.n mentioned in Section 3.1, where the noun can denote different elements of the verb's action schema – INSTANCE OF ACTION ("the act of rewriting or revising a text"), RESULT ("a revised version of a text") and the AGENT ("a person or department at a newspaper engaged in rewriting reporters' stories").[9] The verb's different senses may also denote different event schemata, e.g., the verb *bypass*.v in the sense "to take an indirect route around" denotes the 'self-motion schema' (an AGENT is intentionally moving somewhere; then, the noun *bypass*.n denotes the PATH of the movement), but in the sense of "to conduct (liquid, gas, etc.) by means of a bypass", it denotes the 'caused-motion schema' (an AGENT is causing something to move somewhere; *bypass*.n denotes the PATH again), and finally, in the sense of "to furnish with a bypass" (e.g., "I next by-passed the outlet valve with a one inch pipe."), it denotes the 'action schema' (an AGENT intentionally acts upon or creates something; *bypass*.n denotes the RESULT of the action).[10] The relationship between senses of *rewrite*.v – *rewrite*.n and *bypass*.v – *bypass*.n in the dictionary and their categorical meanings as described by event schemata and elements is demonstrated in Tables 4 and 5 on the following pages.

[9] "rewrite, n. and adj.". *OED Online*. Oxford University Press. https://www.oed.com/viewdictionaryentry/Entry/165056 (accessed October 02, 2021).
[10] "bypass, v.2". *OED Online.* Oxford University Press. https://www.oed.com/view/Entry/25581?rskey=XJT9yn&result=3&isAdvanced=false (accessed December 30, 2021).

rewrite					
verb			noun		
senses in *OED*		event schema	senses in *OED*		event schema element
1.	obsolete	–	1.	"The act of rewriting or revising a text; a revised version of a text."	INSTANCE OF ACTION in an action schema; RESULT in an action schema
2.	a. "To write again, esp. in a different form." b. "To write (an analysis of a phrase or sentence structure) in a different form, usually by expansion." c. "To write (data) to a storage medium (now esp. a rewritable optical disc) for a second or further time; to replace the data on (a storage medium) with other data."	action	2.	"A person or department at a newspaper engaged in rewriting reporters' stories."	AGENT in an action schema

Table 4: Dictionary senses vs. categorical semantic relations of *rewrite*.v – *rewrite*.n.

bypass					
verb			noun		
senses in *OED*		event schema	senses in *OED*		event schema element
1.	a. “To furnish with a bypass.” b. “To take an indirect route around, to avoid (a locality, military position, etc.).” c. figurative	action; self-motion	1.	“A secondary pipe issuing from the main or service pipe below a stop-tap or cock, allowing the free passage of a small supply of gas, steam, etc., when the main supply is shut off; esp. the small tube and pilot light of a gas-jet, which remains alight when the jet is turned off.”	RESULT in an action schema; PATH in a caused-motion schema
2.	“To conduct (liquid, gas, etc.) by means of a bypass.”	caused-motion	2.	“An electrical circuit or element providing an alternative path for the flow of current.”	PATH in a caused-motion schema
			3.	“A road diverging from and re-entering a main road, esp. one constructed as an alternative route to relieve congestion of traffic in a town.”	PATH in a self-motion schema
			4.	transferred and figurative	PATH in a self-motion schema
			5.	“Applied to a type of jet engine.”	
			6.	“An alternative passage for the circulation of blood during a surgical operation (on the heart).”	PATH in a caused-motion schema

Table 5: Dictionary senses vs. categorical semantic relations of *bypass*.v – *bypass*.n.

As we have demonstrated, we base our semantic labels on dictionary definitions. We look for cues in the wording of the definitions and try to base our annotation on them. To demonstrate on some further examples, here are some conversion pairs where the verbs denote the 'self-motion schema' and the nouns denote different elements of the schema:

- *cruise*.n is defined as "the action of cruising",[11] therefore we assign the label 'self-motion' – INSTANCE OF ACTION;
- *arc*.v is defined as "to move or fly in an arc",[12] therefore we assign the label 'self-motion' – PATH;
- *skateboard*.v is defined as "to ride on a skateboard",[13] therefore we assign the label 'self-motion' – MEANS;
- *bench*.v is defined as "to seat oneself on a bench, or as if on a bench",[14] therefore we assign the label 'self-motion' – GOAL.

In the annotation, we also provided a paraphrase based on the dictionary definition expressing the relationship between the verb's and the noun's meaning (and pointing to which element of the verb's schema is denoted by the noun) for each pair. For English, we used the *Oxford English Dictionary*, for Czech, we used *Slovník spisovného jazyka českého* (Havránek et al., 1960), *Slovník spisovné češtiny* (Filipec et al., 1998) and *Nový akademický slovník cizích slov* (Kraus et al., 2005). It is problematic that there is no dictionary of Czech comparable to the *OED*, because the *OED* is of a larger size and is continually revised and extended in its online version. In a few cases, it happened that the verb or noun from the conversion pairs found in the *SYN2015* corpus could not be found in any of the Czech dictionaries or one of its meanings was clearly missing. Therefore, in the Czech part of the data, the semantic annotation was not based purely on dictionary definitions. For example, the noun *pěch* 'rammer' was not found in any of the three dictionaries, but it was clear from the contexts in which it appeared in the corpus, as well as from a quick additional Google search, that it is the name of an instrument used for *pěchování* 'ramming', and therefore denotes the INSTRUMENT in the action schema. Or

[11] "cruise, n.". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/45177?rskey=q1nfzN&result=1&isAdvanced=false (accessed December 30, 2021).
[12] "arc, v.". *OED Online.* Oxford University Press. https://www.oed.com/view/Entry/10246?rskey=96eSZk&result=3&isAdvanced=false (accessed December 30, 2021).
[13] "skateboard, n.". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/180644?rskey=9oWSGz&result=2&isAdvanced=false (accessed January 12, 2022).
[14] "bench, v.1". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/17605?rskey=EK5i6P&result=2&isAdvanced=false (accessed January 12, 2022).

in the case of *nástřel* 'shooting.n', the meaning of 'the amount that has been shot in a race' was not included in the dictionary, but was clearly present in the corpus (e.g., "na 18. místě skončil Antonín Tupý s nástřelem 342 bodů" in *SYN2015*), and therefore we included the DEGREE label in its annotation, along with INSTANCE OF ACTION and LOCATION based on the meaning definitions in *Slovník spisovného jazyka českého*.[15]

3.3.2 Directionality

Our semantic labels are non-directional. They do not specify whether the noun is derived from the verb or the verb from the noun. However, we did also annotate the data for V>N or N>V direction to allow for a closer look into the semantic categories during the analysis. As we have described in Sections 2.1.2 and 2.2.1, there are several different criteria for determining the direction of conversion and different authors take different approaches. In some conversion pairs, the direction is clear, in some conversion pairs, it is difficult to come to a definite conclusion (this is especially true for pairs where both the verb and the noun denote an action). We chose to primarily rely on the criterion of semantic dependence (cf. Marchand, 1964, p. 12; see also Section 2.1.2). If one word is used in another word's definition in the dictionary, we consider it to be the motivating one, for example *fruit*.v is defined as "to bear fruit"[16] and therefore we consider it to be derived from *fruit*.n. Different senses of one conversion pair can have different directions (Plank, 2010; see Section 3.1 for the example of *ballot*.n – *ballot*.v). In some cases, the definition did not use one of the words in the conversion pair to define the other. In those cases, if the noun's meaning was defined using an action noun derived from a verb used in the verb's definition, we decided for the V>N direction (e.g., in the conversion pair *exploit*.v – *exploit*.n, the verb is defined using the verb *undertake*[17] and the noun using the action noun *undertaking*,[18] and therefore we take the noun to be derived from the verb). In some cases, the direction is clear based on the morphematic structure of the word (e.g., in *pressure*.n – *pressure*.v or *novinář* 'journalist' – *novinařit* 'to be a journalist', where the presence of the nominal suffix clearly indicates the N>V direction) or sound alternation patterns (e.g., *výlev*

[15] "nástřel". *Slovník spisovného jazyka českého* [online]. Ústav pro jazyk český AV ČR. https://prirucka.ujc.cas.cz/?slovo=n%C3%A1st%C5%99el (accessed December 30, 2021).
[16] "fruit, v.". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/75073?rskey=lyiKbM&result=2&isAdvanced=false (accessed December 29, 2021).
[17] "exploit, v.". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/66647?rskey=jX7tfq&result=2&isAdvanced=false (accessed December 29, 2021).
[18] "exploit, n.". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/66646?rskey=jX7tfq&result=1&isAdvanced=false (accessed December 29, 2021).

'outpour' – *vylévat* 'pour out', where the alternations of vowel quantity clearly indicate the V>N direction) and stress-shift patterns (e.g., in *rethink*.n – *rethink*.v, where the stress on the first syllable in the noun indicates the V>N direction; cf. Adams, 2001, p. 21). In a few cases, none of these cues was available and we relied on a secondary criterion of frequency (cf. Marchand, 1964, p. 13; Dokulil, 1962, pp. 11–12): the word which had higher absolute frequency of occurrence in the corpus was considered to be the motivating word (e.g., *ebb*.v is taken to be derived from *ebb*.n, because *ebb*.v has 159 hits in the *BNC* and *ebb*.n has 243 hits).

3.3.3 Borderline cases

In the process of semantic annotation, there were some items with which it was more difficult to decide on the semantic label. Although these borderline or unclear cases represent a minority in our data, they deserve an additional comment:

1. One group is represented by items such as *curve*.n – *curve*.v, *sweep*.n – *sweep*.v in the sense 'to have a curved form' (e.g., "The path curved down to the white thatched cottage."),[19] and 'to go around in sweeps' (e.g., "A road swept gently round the hill.")[20]. This sense of the verb denotes what is called *fictive motion* in cognitive linguistics (see e.g. Talmy, 1996) – a physical entity (e.g., the path and the road in the given examples) is not actually moving, but we conceptualize it as if it was. We chose to label these cases as 'motion schema' – PATH, because our conceptualization of these verbs in this sense clearly uses the motion schema, and we imagine the shape of the physical entity to be the PATH of this fictive motion. Similarly, pairs like *jut*.n – *jut*.v, *sally*.n – *sally*.v in the sense 'a jutting out, a projection, protruding point' (e.g., "The land's extremest point, a sandy jut.")[21] and 'a projection, prominence (in architecture)' (e.g., "Sally, a projection; outjutting; applied to a room, gallery, or other building projecting beyond the face of a house or wall.")[22] also include fictive motion and were labelled 'motion schema' – RESULT.

[19] "curve, v.". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/46217?rskey=qKaNba&result=2&isAdvanced=false (accessed December 30, 2021).
[20] "sweep, v.". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/195646?rskey=5WAF8g&result=2&isAdvanced=false (accessed December 30, 2021).
[21] "jut, n.2". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/102244?rskey=1Q2w8w&result=2&isAdvanced=false (accessed April 13, 2022).
[22] "sally, n.1". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/170072?rskey=5msjDB&result=1&isAdvanced=false (accessed April 13, 2022).

2. Pairs such as *climax*.n – *climax*.v, *end*.n – *end*.v are similar in that they also do not denote physical motion, but it seems that we conceptualize the verbs' content as abstract motion (cf. the definitions in *OED*: "to reach or come to a climax",[23] "to come to an end"[24]), and therefore we assigned them the label 'motion schema' – GOAL and 'caused-motion schema' – GOAL (for the sense 'bring to a climax, bring to an end'). This is also why in pairs like *crossover*.v – *crossover*.n, *předstihnout* 'take over' – *předstih* 'overtake', we do not differentiate between the senses including actual physical movement and senses which do not (e.g., "předstihl znalostmi všecky spolužáky" 'he took over his classmates in his knowledge'[25], "a black performer who crossed over into the white rock market"[26]).
3. Generally, pairs with an abstract meaning were more difficult to label. With pairs like *poise*.v – *poise*.n, *torment*.v – *torment*.n, *balancovat*.v 'balance.v' – *balanc*.n 'balance.n', we decided to use the label 'action schema' – RESULT, considering the resulting state as an abstract result of the action. We also used the label 'action schema' – RESULT with pairs like *knight*.v – *knight*.n, *master*.v – *master*.n where the result of the action is a person. With pairs like *chill*.v – *chill*.n, *chladit* 'cool.v' – *chlad* 'cold.n', *mind*.v – *mind*.n, *mysl* 'mind.n' – *myslet* 'think.v' we decided for the INSTRUMENT label, taking the nouns to denote abstract instruments – the *chill* is the instrument of *chilling* something, the *mind* is the instrument of *minding*, etc. With pairs like *sacrifice*.v – *sacrifice*.n, *benefit*.v – *benefit*.n, *bias*.v – *bias*.n we decided to assign the 'transfer schema' to the verbs, taking the verbs to denote abstract transfer because there is a human recipient (who receives the *sacrifice*, *benefit*, *bias* etc.).[27]
4. With pairs denoting emission of sound (e.g., *clang*.v – *clang*.n, *honk*.v – *honk*.n, *hvizd* 'whistle.n' – *hvízdat/hvízdnout* 'whistle.v'), the decision was made to label them as INSTANCE OF ACTION, although the emitted sound denoted by the converted noun could perhaps also be considered the RESULT of the activity.
5. With some conversion pairs, it was difficult to decide between the 'caused-motion schema' – THEME and 'action schema' – INSTRUMENT labels, for example with *lacquer*.v – *lacquer*.n,

[23] "climax, v.". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/34338?rskey=v7tRmi&result=2&isAdvanced=false (accessed December 30, 2021).
[24] "end, v.1". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/61864?rskey=8ZlzVK&result=2&isAdvanced=false (accessed December 30, 2021).
[25] "předstihnout". *Slovník spisovného jazyka českého* [online]. Ústav pro jazyk český AV ČR. https://prirucka.ujc.cas.cz/?slovo=p%C5%99edstihnout (accessed December 30, 2021).
[26] "cross, v.". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/44809?rskey=Ncms0V&result=2&isAdvanced=false (accessed December 31, 2021).
[27] For *sacrifice*, see also Levin's (1993, p. 138) classification of this verb into the group of "contribute" verbs.

cín ‘tin.n’ – *cínovat* ‘tin.v’, *čip* ‘chip.n’ – *čipovat* ‘mark with a chip’. Already in Clark and Clark’s (1979, p. 778) study of verbs converted from nouns, the difficulty of classifying verbs like *leash* is pointed out: “is *leash* a locatum verb (‘Ned caused the dog to have a leash on it’), or an instrument verb (‘Ned caused the dog to be restrained by doing the act one would normally expect to do to a dog with a leash’)?”, i.e., do we conceptualize the action of *leashing* as putting a leash somewhere (‘caused-motion schema’ – THEME) or as using a leash as an instrument to perform an action (‘action schema’ – INSTRUMENT)? We acknowledge that there are two possible ways to conceptualize these actions. In our annotation, we chose the conceptualization which appeared more likely based on the dictionary definition.

6. In some conversion pairs, the semantic relation between the noun and the verb does not only include the relation between the event schema and its element, but also a metaphorical transfer. One group are verbs which denote human behaviour derived from names of animals, such as *ape*.v, *křečkovat* ‘act like a hamster, be greedy’, which include a mapping from the domain of animals to the domain of humans (cf. Martsa, 2013, pp. 155–167). But there are also verbs like *sandwich*.v, *prickle*.v, which do not mean ‘to make a (literal) sandwich’ or to ‘to (literally) be a prickle’, but “to insert (something) between two other things of a widely different character”[28] and “to stick out or stand up like prickles”,[29] i.e., ‘to create something *like* a sandwich’ and ‘to be *like* a prickle’. We do not label metaphors in our annotation and simply focus on the relation between the event schema and its element, so *ape*.v – *ape*.n is labelled ‘action schema’ – AGENT, *sandwich*.v – *sandwich*.n is labelled ‘action schema’ – RESULT and *prickle*.v – *prickle*.n is labelled ‘occurrence schema’ – THEME (cf. also Buljan’s 2004, p. 22 analysis of *sandwich*.v). Metaphor also operates in some conversion pairs involving motion, for example *screw*.v, which can mean “to push or force (something) through or into a hole, receptacle, etc., with a twisting or winding movement” (i.e., ‘to move something *like* a screw’) or “to move with a spinning or rotating motion”, as in “The propeller screws through the air.” (i.e., ‘to move *like* a screw’).[30] Again, we do not

[28] “sandwich, v.”. *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/170598?rskey=lvMpQE&result=4&isAdvanced=false (accessed December 31, 2021).
[29] “prickle, v.”. *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/151162?rskey=qty5di&result=3&isAdvanced=false (accessed December 31, 2021).
[30] “screw, v.”. *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/173460?rskey=wYQwiG&result=3&isAdvanced=false (accessed December 31, 2021).

label the metaphor, so *screw*.v in these two meanings received the 'caused-motion schema' – THEME, 'motion schema' – THEME label.

7. Some of the conversion pairs can describe emotions in their metaphorical meanings, e.g., *stew*.v – *stew*.n (one of the verb's meanings is "to fret; to suffer anxiety or suspense; to be in an agitated state"[31] and one of the noun's meanings is "a state of excitement, esp. of great alarm or anxiety."[32]) or *uchvátit*/*uchvacovat* 'amaze' – *úchvat* 'amazement' (as in "Ten úchvat, že užitečnost té nejjasnější hvězdy je prkotina oproti třeba i váhavě lezoucímu zárodku myšlenky." 'The amazement that the usefulness of the brightest star is insignificant compared to the hesitant birth of an idea.' in *SYN2015*). Emotions represent an area where metaphorical language is used very frequently, and this has often been studied in the cognitive linguistics framework (cf., for example, Kövecses, 2000). With these conversion pairs which have a different primary meaning, we do not add the 'emotion schema' label because we believe that although they can be metaphorically used in the domain of emotions, their primary schema is mapped onto the new domain and the emotion is still conceptualized as the original meaning's schema, e.g., the 'action schema' of *stew*.n or *uchvátit*.v (cf. also Buljan's, 2004, p. 24 analysis of *bottle*.v used in the domain of emotions).
8. Finally, some verbs do not represent prototypical examples of the event schema that they were assigned. There are verbs of movement without a clear SOURCE–PATH–GOAL structure which were, nevertheless, labelled as one of the schemata of motion, e.g., *skirt*.v 'to move on the outskirts', *cuk* 'twitch.n' – *cukat/cuknout* 'twitch.v'. There are also action verbs that do not have a tangible RESULT or THEME, e.g., the verbs denoting expression of sound, which still received the label 'action schema'.

The whole annotated sample is attached to the thesis in the form CSV files. Only the author of this thesis carried out the semantic annotation. There was no other annotator and inter-annotator agreement was not tested. We are aware that there are unclear cases to be found across the data and there may be objections to the individual decisions that were made. However, we attempted to be consistent when assigning the semantic labels and to rely on the dictionaries as much as possible.

[31] "stew, v.2". *OED Online*. Oxford University Press. https://www.oed.com/view/Entry/190084?rskey=8EdoRZ&result=6&isAdvanced=false (accessed December 31, 2021).
[32] "stew, n.2". *OED Online.* Oxford University Press. https://www.oed.com/view/Entry/190080?rskey=8EdoRZ&result=2&isAdvanced=false (accessed December 31, 2021).

4. Results

In this section, we will look at how frequently the element labels were assigned to the nouns in the conversion pairs in our data and compare the frequencies in both languages. As there were often multiple element labels assigned, the overall number of element labels is higher than the number of conversion pairs analysed (the 300 pairs in English have 521 individual labels, the 300 pairs in Czech have 361 individual labels). We carry out the analysis on the level of individual senses of the words in the conversion pairs (that is, the categorical meanings assigned to the nouns based on the verbs' event schemata), not on the level of the whole lexemes. Therefore, because we structure this section based on the element labels assigned to the nouns, one conversion pair will often be discussed under more than one heading – e.g., *sand* will be discussed under GOAL (in the meaning of 'to run (a ship) into sand'), THEME (in the meaning of 'to sprinkle with sand') and INSTRUMENT (in the meaning 'to grind/polish using sand').

After we analyse the individual semantic relations separately, in Section 4.10 we will look at how common it is for several of these semantic relations to appear together in one conversion pair and look for patterns of relations that often appear together. The semantic relations annotated in each conversion pair can be found in the data in the electronic attachment.

Figures 14 and 15 on the following page show how frequently the nouns from the conversion pairs denote each element of the verbs' event schemata.

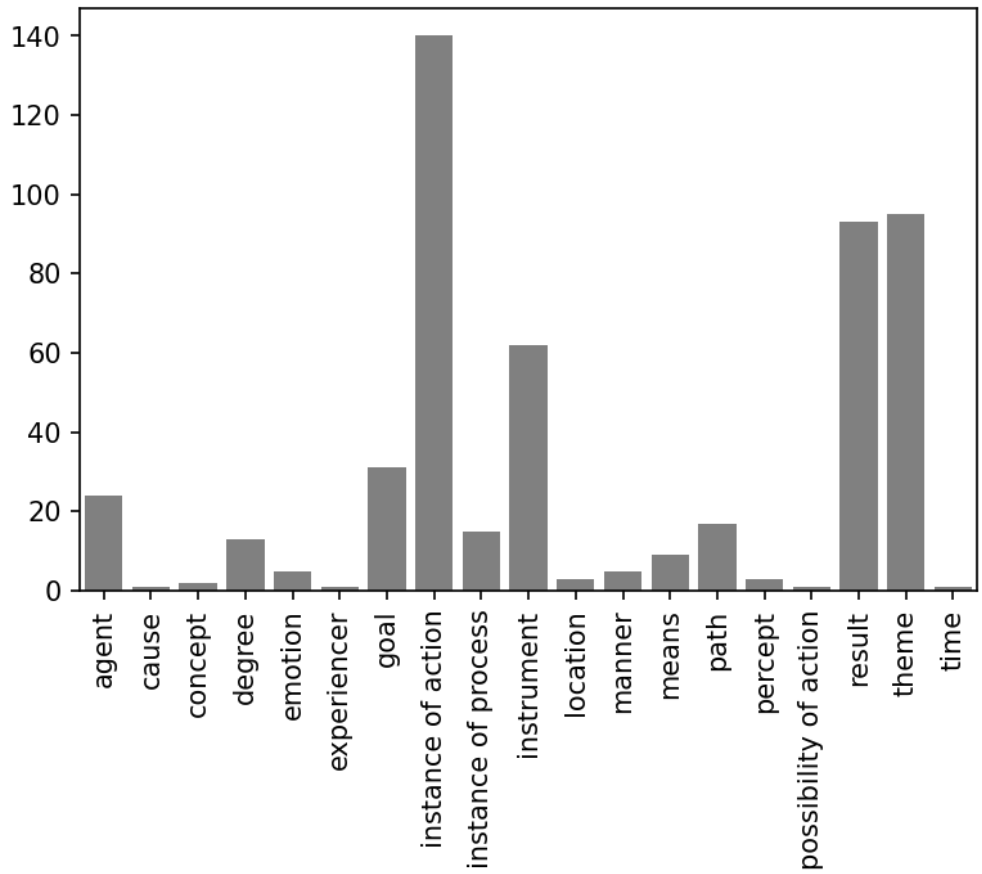

Figure 14: Counts of noun senses in the English conversion pairs assigned the individual elements (in alphabetical order).

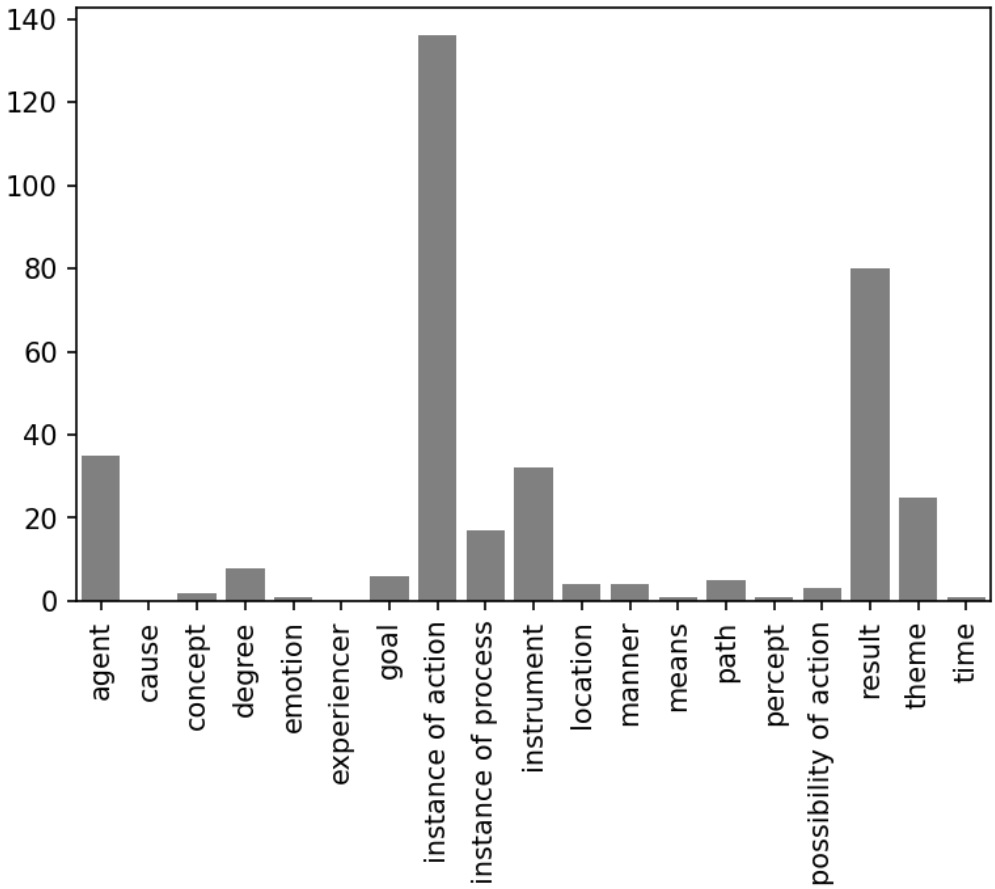

Figure 15: Counts of noun senses in the Czech conversion pairs assigned the individual elements (in alphabetical order).

We can see that in samples from both languages, the noun from the conversion pair was assigned the label INSTANCE OF ACTION by far the most frequently. Other frequent types are pairs where the noun is labelled RESULT, THEME, INSTRUMENT and AGENT, although except for the RESULT type, there are visible differences between their frequencies in each language. The GOAL type belongs to the more frequent in the English sample, while it is minor in the Czech sample. The pairs where the noun denotes INSTANCE OF PROCESS are the last type that has a frequency higher than 10 in both language samples. The PATH and DEGREE labels have been assigned more than 10 times only in the English data. The rest of the types are marginal in both language samples.

In the following subsections, we will discuss each type individually and compare the differences between the two languages in more detail. The order in which the data will be discussed is based on the descending order of the frequency with which the element labels were assigned in English.

4.1. Instance of action

In this type, the noun is assumed to denote the event schema as a whole, only reconceptualized as a substance (cf. Dokulil's term "transposition" or Langacker's term "conceptual reification" described in Sections 2.2.1.1 and 3.1). The metaphor of a film and a photograph, which is sometimes used to illustrate the difference between verbs and nouns, may be useful here: the same content is denoted by both the verb and the noun in the conversion pair, but once as "a film" (in the verb) and once as "a photograph" (in the noun). Examples of nouns in the sense in which they received the label INSTANCE OF ACTION are illustrated in these sentences:

(1) *And don't let your **search** for material lead you to choose the obscure for obscurity.*[33]
(*search*.n denotes INSTANCE OF ACTION in the 'action schema' of *search*.v)

(2) *Jako by poskakoval, ale nebyly to ani **poskoky***
'As if he was jumping, but they weren't even **jumps**'
(*poskok* denotes INSTANCE OF ACTION in the 'self-motion schema' of *poskakovat*/*poskočit*)

(3) Have a **look** at these.
(*look*.n denotes INSTANCE OF ACTION in the 'perception schema' of *look*.v)

[33] English examples are taken from the *BNC*, Czech examples are taken from *SYN2015*.

In both language samples this label was assigned the most frequently (140 in English, 136 in Czech). In most pairs, the verb denotes the 'action schema' (95 in English, 94 in Czech), e.g., *abuse*, *rebuild*, *whistle*, *balet* 'ballet' – *baletit* 'do ballet', *nákup* 'shopping.n' – *nakupovat*/*nakoupit* 'shop.v', *prostřih* 'cut.n' – *prostříhat*/*prostřihnout* 'cut.v', but the verb can also denote the 'self-motion schema' (20 in English, 23 in Czech), e.g., *cruise*, *somersault*, *odchod* 'departure' – *odcházet*/*odejít* 'leave.v', *šplh* 'climb.n' – *šplhat* 'climb.v', the 'caused-motion schema' (17 in both languages), e.g., *sweep*, *transplant*, *import* 'import.n' – *importovat* 'import.v', *posun* 'movement' – *posunovat*/*posunout* 'move.v', and in a few cases also the 'transfer schema' (5 in English, 1 in Czech), e.g., *feed*, *guarantee*, *nápomoc* 'help.n' – *napomáhat*/*napomoci* 'help.v', and the 'cognition/perception schema' (3 in English, 1 in Czech), e.g. *rethink*, *průhled* 'look.n through' – *prohlédnout* 'look.v through'.

In both languages, the majority of the pairs seems to have the V>N direction (see Section 3.3.2 for the way of determining the direction of conversion used in this thesis). 118 of the 136 Czech pairs and 130 of the 140 English pairs have the V>N direction, i.e., they contain deverbal action nouns.

Overall, there is no significant difference between the INSTANCE OF ACTION type in Czech and English. In both languages, it is the most frequent type including mostly deverbal nouns denoting mostly voluntary actions and quite frequently also voluntary movement. The specific conversion pairs of the ACTION type are presented in Tables 6 and 7.

Event schema	**English conversion pairs where the noun is labelled INSTANCE OF ACTION**	**Count**
action	*abuse*, *access* 2[34], *assault*, *assent*, *ballot*, *bell* 3, *biopsy*, *bonk*, *buzz*, *clamour*, *clang*, *clutch*, *cobble* 2, *con*, *conduct*, *cook*, *crab* 1, *crinkle* 2, *crow*, *crunch*, *crush*, *dance*, *dare*, *daub*, *divorce*, *endeavour*, *exploit*, *feed*, *fritter*, *gargle*, *grasp*, *hawk* 2, *hem* 2, *honk*, *hustle*, *chip* 1, *chip* 2, *chuck* 1, *chuck* 2, *issue*, *jive*, *joke*, *lag* 1, *lick*, *manifest*, *meet*, *nap* 1, *nick*, *overshoot*, *patrol*, *pelt* 1, *plonk*, *poke*, *port* 2, *pound* 1, *purr*, *rebound*, *rebuff*, *rebuild*, *remand*, *re-release*, *restart*, *re-use*, *re-write*, *romance*, *ruffle*, *scowl*, *screen*, *scruple*, *search*, *shrug*, *skip* 1, *slice*, *slip* 1, *slumber*, *slurp*, *sniff*, *sniffle*, *solder*, *spend*, *steep*, *stint*, *surrender*, *swear*, *swill*, *switch*, *tack*, *taunt*, *tickle*, *torment*, *torture*, *twitter* 1, *wheeze*, *whisk*, *whistle*	95
self-motion	*access* 1, *crossover*, *cruise*, *dive*, *fly* 1, *hill-walk*, *meander*, *paddle* 1, *paddle* 2, *pelt* 1, *sally* 1, *scurry*, *skip* 1, *slip* 1, *slither*, *somersault*, *sweep*, *trudge*, *twirl*, *walk*	20
caused-motion	*conduct*, *crab* 3, *curve*, *export*, *chuck* 2, *miss*, *port* 3, *retrofit*, *screw*, *skip* 2, *slice*, *sprinkle*, *sweep*, *top*, *transplant*, *twirl*, *wind* 1	17
transfer	*feed*, *guarantee*, *pawn*, *pay*, *sacrifice*	5

[34] The numbers indicate homonyms – each homonymous pair is treated as a separate entry and is labelled by a number to differentiate it from its homonymous pair(s).

cognition/perception	*rethink*, *look*, *sniff*	3
Total		140

Table 6: English conversion pairs in which the noun is labelled INSTANCE OF ACTION.

Event schema	**Czech conversion pairs where the noun is labelled INSTANCE OF ACTION**	**Count**
action	*balet–baletit*, *blábol–blábolit*, *bodyček–bodyčekovat*, *brek–brečet*, *čin–činit*, *deal–dealovat*, *dech–dýchat/dýchnout*, *dopočet–dopočítat*, *doprodej–doprodat*, *dotisk–dotiskovat/dotisknout*, *dozor–dozorovat*, *fet–fetovat*, *flák–fláknout*, *hlomoz–hlomozit*, *hlt–hltat*, *hluk–hlučet*, *hmit–hmitat*, *hovor–hovořit*, *hřích–hřešit*, *hvizd–hvízdat/hvízdnout*, *chmat–chmatat/chmátnout*, *chov–chovat*, *jam–jamovat*, *jek–ječet*, *kec–kecat/kecnout*, *kiks–kiksat/kiksnout*, *masakr–masakrovat*, *mord–mordovat*, *nábor–nabírat/nabrat*, *nákup–nakupovat/nakoupit*, *nářez–nařezat/naříznout*, *nástřel–nastřelovat/nastřílet/nastřelit*, *nástřik–nastříkat/nastříknout*, *oklest–oklesťovat/oklestit*, *okus–okusovat/okousat*, *opich–opíchat/opíchnout*, *ořez–ořezat/oříznout*, *pláč–plakat*, *plen–plenit*, *podpal–podpalovat/podpálit*, *podtrh–podtrhovat/podtrhnout*, *pohovor–pohovořit*, *pokos–pokosit*, *pokřik–pokřikovat*, *port–portovat*, *posunek–posunkovat*, *potah–potahovat/potáhnout*, *povzdech–povzdechnout*, *proces–procesovat*, *proklik–proklikat/prokliknout*, *prořez–prořezat/prořínout*, *prostřih–prostříhat/prostřihnout*, *přetah–přetahovat/přetáhnout*, *převrat–převracet/převrátit*, *příhřev–přihřívat/přihřát*, *přípočet–připočítat/připočíst*, *redesign–redesignovat*, *relax–relaxovat*, *remix–remixovat*, *rentgen–rentgenovat*, *roztěr–roztírat/rozetřít*, *ruch–rušit*, *seč–sekat/seknout*, *servis–servisovat*, *shon–shánět*, *smír–smiřovat/smířit*, *sněm–sněmovat*, *spoj–spojovat/spojit*, *střeh–střežit*, *střih–stříhat/stříhnout*, *šach–šachovat*, *škyt–škytat/škytnout*, *šluk–šlukovat/šluknout*, *šprým–šprýmovat*, *trh* 2*–trhat/trhnout*, *truc–trucovat*, *úchvat–uchvacovat/uchvátit*, *virbl–virblovat*, *vpich–vpichovat/vpíchat/vpíchnout*, *vrt–vrtat/vrtnout*, *vstřel–vstřelit*, *vtípek–vtipkovat*, *výběr–vybírat/vybrat*, *výdech–vydechovat/vydechnout*, *výkon–vykonat*, *výkup–vykupovat/vykoupit*, *výrub–vyrubat*, *výškrt–vyškrtat/vyškrtnout*, *zábrus–zabrušovat/zabrousit*, *započet–započítat/započíst*, *zápověď–zapovídat/zapovědět*, *závěr–zavírat/zavřít*, *zvuk–zvučet*, *žeh–žíhat*	94
self-motion	*dřep–dřepět/dřepnout*, *klek–klečet/kleknout*, *klus–klusat*, *náběh–nabíhat/naběhnout*, *nájezd–najíždět/najet*, *odchod–odcházet/odejít*, *podmet–podmítat/podmést*, *podřep–podřepnout*, *poklek–pokleknout*, *poskok–poskakovat/poskočit*, *pouť–putovat*, *průnik–pronikat/proniknout*, *předstih–předstihovat/přestihnout*, *přemet–přemetnout*, *přeskok–přeskakovat/přeskákat/přeskočit*, *přískok–přiskakovat/přiskákat/přiskočit*, *přístup–přistupovat/přistoupit*, *seskok–seskakovat/seskákat/seskočit*, *slet–sletět/slétnout*, *šplh–šplhat*, *výpad–vypadnout*, *vzlet–vzlétat/vzletět/vzlétnout*, *zájezd–zajíždět/zajet*	23
caused-motion	*cuk–cukat/cuknout*, *import–importovat*, *obstřel–obstřelovat/obstřelit*, *odklon–odklánět/odklonit*, *odnos–odnášet/odnést*, *odtah–odtahovat/odtahat/odtáhnout*, *pohyb–pohybovat/pohnout*, *ponor–ponořovat/ponořit*, *posun–posunovat/posunout*, *přeliv–přelévat/přelít*, *přenos–přenášet/přenosit/přenést*, *švenk–švenkovat/švenknout*, *únos–unášet/unést*, *výlev–vylévat/vylít*, *vzpaž–vzpažovat/vzpažit*, *záškub–zaškubat/zaškubnout*, *závoz–zavézt*	17
transfer	*nápomoc–napomáhat/napomoci*	1
cognition/perception	*průhled–prohlédnout*	1
Total		136

Table 7: Czech conversion pairs in which the noun is labelled INSTANCE OF ACTION.

4.2. Result

In this section, we will discuss pairs in which the noun was assigned the RESULT label. Examples of nouns used in the sense in which they received this label (or verbs used in the sense in which their corresponding noun received this label) are illustrated in these sentences:

(4) *v černých saténových šatech s geometrickými* ***prostřihy***
'in a black satin dress with geometrical **cut-outs**'
(*prostřih* denotes the RESULT in the 'action schema' of *prostříhat*/*prostřihnout*)

(5) *his cheeks* ***colouring*** *again with embarrassment*
(*colour*.n denotes the RESULT in the 'occurrence schema' of *colour*.v)

(6) *musíme k základnímu panelu přidat další vrstvy (****vsyp****, násyp , skladba podlahy)*
'we have to add additional layers to the base panel (**poured in layer**, poured over layer, flooring)'
(*vsyp* denotes the RESULT in the 'caused-motion schema' of *vsypat*)

Conversion pairs where the noun denotes RESULT are clearly the second most frequent type in the Czech sample (80 pairs). In the English sample, this type has a similar frequency as in Czech (93 pairs), but it basically shares second place with conversion pairs where the noun denotes THEME (94 pairs, see the following Section 4.3).

In most pairs, the verb denotes the 'action schema', i.e., the noun denotes the result of a voluntary action carried out by an AGENT (67 in English, 63 in Czech). The results are of varying semantic subtypes – created physical entities (*sculpture*, *mošt* 'juice.n'), pieces/segments (*slice*, *fragment* 'fragment.n'), groupings (*array, spolek* 'association, club'), resulting states (*poise*, *distress*, *balanc* 'balance.n', *smír* 'reconciliation') or abstract results (*institute*, *scheme*, *plán* 'plan.n').

In pairs where the verb denotes the 'occurrence schema' (19 in English, 14 in Czech), the nouns denote results of spontaneous processes, e.g., processes connected with plant-life (*bell* 1, *bloom*, *fruit*, *tassel*, *odnož* 'offshoot.n', *zárost* 'growth'), diseases (*fester*, *hnis* 'pus') but also healing processes (*scar*), geological processes (*ohlaz* 'smoothed out rock', *osyp* 'piled up debris') and other physical processes (*yeast*, *caramel*, *zámrz* 'ice.n', *polymer* 'polymer', *rez* 'rust.n'). There is also one result of an abstract process in Czech (*následek* 'consequence'). It may be interesting to note that in all the different pairs in our data in which the verb denotes the 'occurrence schema', the noun denotes the RESULT most often in both languages.

The verb denotes the 'motion schema' in only 1 Czech pair (*výtok* 'outflow, discharge' – *vytékat*/*vytéct* 'flow out') and 6 English pairs. In the English pairs, the motion may be imaginary, e.g., *sally* 1 'what sallies, i.e., a projection from a surface (a term from architecture)'. The verb denotes 'caused-motion schema' in only 1 English pair and 2 Czech pairs.

Again, there are no significant differences between English and Czech in the RESULT type overall. The nouns mostly denote results of voluntary actions, less often results of spontaneous processes or spontaneous motion (the latter being completely minor in Czech). The specific conversion pairs of the RESULT type are presented in Tables 8 and 9.

Event schema	**English conversion pairs where the noun is labelled RESULT**	**Count**
action	*array*, *award*, *batch*, *bench*, *blend*, *blur*, *border*, *breast*, *budget*, *by-pass*, *contract*, *crinkle*, *crown*, *crush*, *curve*, *daub*, *dish*, *distress*, *ejaculate*, *end*, *festoon*, *flavour*, *foot*, *fritter*, *fruit*, *hem* 1, *char*, *chip* 1, *institute*, *issue*, *key*, *knight*, *master*, *misfire*, *mushroom*, *nap* 2, *nick*, *overshoot*, *petition*, *pigeonhole*, *pleat*, *poise*, *rebuild*, *re-release*, *re-write*, *roll*, *romance*, *ruffle*, *sandwich*, *scar*, *sculpture*, *segment*, *scheme*, *skirt*, *slice*, *smear*, *smock*, *splice*, *stew*, *stitch*, *stub*, *target*, *ticket*, *tongue*, *torment*, *torture*, *wind* 1, *wrinkle*	67
occurrence	*arc*, *bell* 1, *bloom*, *caramel*, *colour*, *crown*, *fester*, *fruit*, *gleam*, *halo*, *char*, *moult*, *mushroom*, *ruffle*, *scar*, *shiver* 1, *snowball*, *tassel*, *yeast*	19
motion	*curve*, *issue*, *jut*, *roll*, *sally* 1, *twirl*	6
caused-motion	*sprinkle*	1
Total		93

Table 8: English conversion pairs in which the noun is labelled RESULT.

Event schema	**Czech conversion pairs where the noun is labelled RESULT**	**Count**
action	*balanc–balancovat*, *brak–brakovat*, *debet–debetovat*, *dech–dýchat*/*dýchnout*, *design–designovat*, *dotisk–dotiskovat*/*dotisknout*, *drť–drtit*, *druh–družit*, *flus–flusat*/*flusnout*, *formát–formátovat*, *fragment–fragmentovat*, *chrchel–chrchlat*, *level–levelovat*, *lístek–lístkovat*, *mix–mixovat*, *mošt–moštovat*, *nábrus–nabrousit*, *náplet–naplétat*, *nářez–nařezat*/*nařiznout*, *nástřik–nastříkat*/*nastříknout*, *obtah–obtahovat*/*obtáhnout*, *odřez–odřezat*/*odříznout*, *okov–okovat*, *oštěp–oštípat*, *ovar–ovařit*, *plán–plánovat*, *plátek–plátkovat*, *podkop–podkopat*/*podkopnout*, *pokos–pokosit*, *prd–prdět*, *prořez–prořezat*/*proříznout*, *prostřih–prostříhat*/*prostřihnout*, *průpich–propichovat*/*propíchat*/*propíchnout*, *přetah–přetahovat*/*přetáhnout*, *přítisk–přitisknout*, *remix–remixovat*, *rentgen–rentgenovat*, *rozdíl–rozdělovat*/*rozdělit*, *rozkres–rozkreslovat*/*rozkreslit*, *roztěr–roztírat*/*rozetřít*, *seč–sekat*/*seknout*, *smír–smiřovat*/*smířit*, *spolek–spolčovat*/*spolčit*, *strach–strašit*, *střih–stříhat*/*střihnout*, *text–textovat*, *účin–učinit*, *úchvat–uchvacovat*/*uchvátit*, *uzel–uzlovat*, *vpich–vpichovat*/*vpíchat*/*vpíchnout*, *vrt–vrtat*/*vrtnout*, *vstřel–vstřelit*, *výběr–vybírat*/*vybrat*, *výkon–vykonat*, *výpis–vypisovat*/*vypsat*, *výrub–vyrubat*, *výškrt–vyškrtat*/*vyškrtnout*, *vývrh–vyvrhovat*/*vyvrhnout*, *zábrus–zabrušovat*/*zabrousit*, *záhrab–zahrabat*/*zahrábnout*, *zápočet–započítat*/*započíst*, *zvuk–zvučit*	63
occurrence	*čmoud–čmoudit*, *čoud–čoudit*, *hnis–hnisat*, *chlad–chladit*, *násled–následovat*, *odnož–odnožovat*, *ohlaz–ohlazovat*/*ohladit*, *osyp–osypat*, *otlak–otlačovat*/*otlačit*, *polymer–polymerovat*, *rez–reznout*, *rozprask–rozpraskat*/*rozprasknout*, *zámrz–zamrzat*/*zamrznout*, *zárost–zarůstat*/*zarůst*	14
motion	*výtok–vytékat*/*vytéct*	1

caused-motion	*vsyp–vsypat*, *zákrut–zakroutit*	2
Total		80

Table 9: Czech conversion pairs in which the noun is labelled RESULT.

4.3. Theme

THEME is broadly something/someone that something is done to / happens to, or something that is in some kind of state. In each type of event schema, this element represents something slightly different. In pairs where the verb denotes the 'action schema', it is the patient/affected of the action (someone/something that the action is done to). In pairs where the verbs denotes the 'caused-motion schema', it is the thing that is moved. In pairs where the verb denotes the 'transfer schema', it is the thing that is given to a recipient. In pairs where the verb denotes the 'occurrence schema', it is something that is in some kind of state / undergoes some spontaneous process. Finally, in pairs where the verb denotes the 'motion schema', it is something that moves on its own (without an agent initiating the movement).

Examples of nouns used in the sense in which they received this label (or verbs used in the sense in which their corresponding noun received this label) are illustrated in these sentences:

(7) *The brake and **clutch** are too close together for my modest size sevens*
(*clutch*.n denotes the THEME in the 'action schema' of clutch.v)

(8) *Květinami lze **dekorovat** i malou koupelnu*
'You can **decorate** a small bathroom with flowers'
(*dekor* denotes the THEME in the 'caused-motion schema' of *dekorovat*)

(9) *school-leavers are **graded** in eight subjects*
(*grade*.n denotes the THEME in the 'transfer schema' of *grade*.v)

(10) *S ložnicí **sousedila** jídelna*
'The bedroom is **neighboured** by the dining room'
(*soused* denotes the THEME in the 'occurrence schema' of *sousedit*)

(11) *the knife **scythed** through the man's tongue*
(*scythe*.n is the THEME in the 'motion schema' of *scythe*.v)

In English, the noun denotes the THEME in 95 pairs, which means that this type has more or less the same frequency as the RESULT type. In contrast, it is only the fifth most frequent type in Czech with 25 pairs. We will now explore the reasons for this difference.

There are 16 English pairs where the verb denotes the 'action schema' and they include nouns from different semantic subgroups: a food/drink that is consumed (*lunch*, *gargle*, *swill*), a thing that is held (*clutch*, *grasp*), a material that is gathered/picked (*mushroom*), an animal that is caught (*crab* 2, *rat*), a human patient (*initiate*, *institute*, *remand*). In Czech, in contrast, this is a minor subcategory including only 5 pairs limited to the 'consumed food/drink/substance' semantic group (*cumel* 'candy' – *cumlat* 'suck.v', *fet* 'drug.n' – *fetovat* 'take drugs', *chlast* 'alcohol' – *chlastat* 'drink alcohol', *oběd* 'lunch.n' – *obědvat* 'have lunch', *zob* 'bird feed' – *zobat* 'peck.v'). In English, conversion is in competition for the human patient meaning with suffixation by *-ee* (e.g., *employee*). In Czech, these patient nouns are also formed by suffixation, using the suffix *-ec* (e.g., *zaměstananec* 'employee', *trestanec* 'convict.n'), but in contrast to English, it seems that conversion is not really used to form nouns with this meaning.

In pairs where the verb was assigned the 'caused-motion schema' label, the 43 English pairs include verbs with the paraphrase 'provide with N' (Plag's "ornative" category, cf. Section 2.1.2, e.g., *bell* 2, *bench*, *clock*, *crown*, *festoon*), but also 'remove N' (Plag's "privative" category, cf. Section 2.1.2, *breast* 'to remove the breast from a bird when cooking', *core* 'to remove the core of a fruit', *husk* 'to remove the husk', *pelt* 2 'to remove pelt from an animal', *slip* 2 'to remove a slip from a stock, stalk or branch', *stub* 'to remove stubs from the land', *switch* 'to remove switches from a tree', *wind* 2 'to deprive of wind, put out of breath / cause a baby to burp'), 'put on N (as clothing)' (*frock*, *smock*, *slip*), 'move N' (*bowl*, *export*, *snowball* 'throw snowballs', *twirl*), and more abstract cases, like *tax* 'to put a tax on something', or cases including a metaphor, e.g., *screw* 'to move something *like* a screw'.

Out of the 14 Czech pairs where the verb was assigned the 'caused-motion schema' label, the majority includes verbs with the paraphrase 'provide with N' (*solit* 'salt.v', *čipovat* 'chip.v', *dekorovat* 'decorate'). The subtype where the verb denotes removal of the THEME is completely missing in the Czech data, while it is quite frequent in the English data. It seems that in Czech, verbs with this meaning are formed from the nouns using a prefix (e.g., *pecka* 'core of a fruit' > *vypeckovat* 'core.v', *plevel* 'weeds.n' > *odplevelit* 'weed.v'), rather than by conversion. It also seems that in Czech, prefixation competes with conversion in the formation of verbs meaning 'to provide with' as well (e.g., *citron* 'lemon' > *ocitronovat* 'put in lemon', *klobouk* 'hat' > *okloboukovat* 'put a hat on somebody'). A further analysis of this type of data would be necessary to ascertain the nature and extent of this competition.

In pairs where the verb denotes the 'transfer schema', the THEME type pairs in both language samples comprise mostly verbs meaning 'to give somebody N'. The THEME is either a physical

object and the verb denotes literal transfer (e.g., *array*, *pawn*, *pay*) or an abstract notion and the verb denotes abstract transfer (e.g., *bias*, *favour*, *welcome*; *hlasovat* 'vote.v', *holdovat* 'pay tribute', *pardonovat* 'pardon.v').

The pairs where the verb denotes the 'occurrence schema' and the noun denotes THEME comprise verbs meaning 'to be N'. Only one pair like this was found in the Czech data (*soused* 'neighbour.n' – *sousedit* 'to be the neighbour'). In English there are 11 pairs which include verbs like *border* 'to be the border' (as in "A low granite wall borders the road."[35]), *cause* 'to be the cause', or *ornament* 'to be an ornament' (as in "A china cat ornamenting the fireplace."). There are also several pairs which include a metaphor, e.g., *crown* 'to be like a crown' (as in "Her statue crowns a public fountain.").

Pairs where the verb denotes the 'motion schema' and the noun denotes THEME do not appear at all in the Czech data, while there are 7 in English. They often include a metaphor (e.g., *bowl* 'move like a bowl', *screw* 'move like a screw', *scythe* 'move like a scythe' – cf. example 11) and there is also 1 pair which includes imaginary motion (*crossover* 'a piece of music which crosses over to a different audience').

It may be interesting to note that while in English, the majority of the pairs seem to have the N>V direction (71 out of the 95 pairs), in Czech, it is only about a half of the data (13 out of the 25 pairs). Therefore, it seems that it is mostly the higher capacity to form converted denominal verbs of the THEME type in English that is responsible for the difference between the two languages.

To summarize, there is a significant difference between English and Czech in the THEME type, with the semantic subtypes as well as the overall frequency with which it was assigned being more limited in Czech. In English, if the verb denotes an action, the noun can denote a food/drink that is consumed, a thing that is held, a material that is gathered/picked, an animal that is caught or a human patient, while in Czech, the options seem to be limited to the meaning of food/drink that is consumed. If the verb denotes caused motion, the noun can denote a thing that is moved/put somewhere in data from both languages (although it is less frequent in Czech), but it was found to denote a thing that is removed only in English. The pairs where the verb denotes the 'occurrence schema' and has the paraphrase 'to be N' are very limited in Czech, while there are several in English, some also including a metaphor. Finally, the noun was found to denote something that moves on its own only in English, with the pairs also frequently

[35] Examples in this paragraph are taken from the dictionary entries in *OED*.

including a metaphor. The specific conversion pairs of the THEME type are presented in Tables 10 and 11.

Event schema	English conversion pairs where the noun is labelled THEME	Count
action	*clock* 3, *clutch*, *crab* 2, *exploit*, *gargle*, *grasp*, *initiate*, *institute*, *lunch*, *mushroom*, *rat*, *remand*, *roll*, *skip* 1, *swill*, *tack*	16
caused-motion	*bell* 2, *bench*, *bowl*, *breast*, *clock*, *core*, *crossover*, *crown*, *export*, *festoon*, *frock*, *fuel*, *husk*, *chip* 1, *inset*, *jewel*, *key*, *lacquer*, *ornament*, *pelt* 2, *plate*, *sand*, *screen*, *screw*, *slip* 1, *slip* 2, *smock*, *snowball*, *sprig*, *sprinkle*, *stub*, *swab*, *sweep*, *switch*, *table*, *tassel*, *tax*, *ticket*, *top*, *transplant*, *turnip*, *twirl*, *wind* 2	43
transfer	*array*, *award*, *benefit*, *bias*, *credit*, *favour*, *feed*, *grade*, *guarantee*, *mandate*, *pawn*, *pay*, *sacrifice*, *sanction*, *tax*, *ticket*, *turnip*, *welcome*	18
occurrence	*border*, *cause*, *crown*, *festoon*, *occasion*, *ornament*, *prickle*, *skirt*, *tongue*, *top*, *tower*	11
motion	*bowl*, *crossover*, *fly* 1, *miss*, *screw*, *scythe*, *slither*	7
Total		95

Table 10: English conversion pairs in which the noun is labelled THEME.

Event schema	Czech conversion pairs where the noun is labelled THEME	Count
action	*cumel–cumlat*, *fet–fetovat*, *chlast–chlastat*, *oběd–obědvat*, *zob–zobat*	5
caused-motion	*akcent–akcentovat*, *cín–cínovat*, *čip–čipovat*, *dekor–dekorovat*, *import–importovat*, *návěs–navěsit*/*navěšet*, *obuv–obouvat*/*obout*, *poprach – poprášit*, *přeliv–přelévat*/*přelít*, *příklad–přikládat*/*přiložit*, *přívěs–přivěsit*, *sůl–solit, tag–tagovat*, *vsyp–vsypat*	14
transfer	*dispenz–dispenovat*, *hlas–hlasovat*, *hold–holdovat*, *mai*/*mejl–mailovat*/*mejlovat*, *pardon–pardonovat*	5
occurrence	*soused–sousedit*	1
Total		25

Table 11: Czech conversion pairs in which the noun is labelled THEME.

4.4. Instrument

Examples of nouns used in the sense in which they received the INSTRUMENT label (or verbs used in the sense in which their corresponding noun received this label) are illustrated in these sentences:

(12) *They **sanded** and polished the floor.*
(*sand*.n denotes the INSTRUMENT of the 'action schema' of *sand*.v)

(13) *mají zamlženou **mysl** a sklon k násilí*
'they have a clouded **mind** and a tendency to be violent'
(*mysl* denotes the INSTRUMENT of the 'cognition schema' of *myslet*)

(14) *he had been forced to **lease** some of his land to cover his losses*
(*lease*.n denotes the INSTRUMENT of the 'transfer schema' of *lease*.v)

In English, the pairs where the noun denotes INSTRUMENT are the fourth most frequent type with 62 pairs. In Czech, this type is only about half as frequent with 32 pairs, which makes it slightly less frequent than the AGENT type (see the following Section 4.5). In almost all of the pairs in both languages, the verb denotes the 'action schema'. Only one pair in each language belongs to the 'cognition schema' (because the *mind* is the instrument of *minding*; the same goes for *mysl* 'mind.n' – *myslet* 'think.v' in Czech) and two pairs in English belong to the 'transfer schema' where the nouns denote legal instruments: *lease* 'instrument by which possession is granted' and *mandate* 'instrument by which territory is assigned to another power' (these are instruments of giving somebody something rather than the thing itself that is given).

In English, 56 out of the 62 pairs, that is more than 90%, seem to have the N>V direction. In Czech, it is only 19 out of the 33 pairs, that is about 60%. It is therefore mostly the English conversion pairs with a denominal verb meaning 'to use N' in English that are responsible for the difference in frequency between the two languages. English seems to form these types of converted verbs very often, which has been pointed out already by Plag (1999, p. 221). Perhaps this is because this type has no competitors in other word-formation processes – as Adams (2001, p. 24) points out, "[s]uffixed verbs which are clearly instrumental are scarce or non-existent" in English. However, this is also true for Czech. It could be that Czech makes up for the smaller number of available verbs meaning 'to use N' by using syntactic V + PP constructions (e.g., *chytat do pasti* 'catch using a snare' instead of forming an instrumental verb from *past* 'snare.n'), but this suggestion would have to be verified on data.

Generally, the semantic subtypes of instruments in the conversion pairs seem to be similar in both languages – the nouns denote physical objects (*axe*, *bayonet*, *gel* 'gel.n', *lis* 'press.n'), abstract instruments (*romance* 'to persuade using romance', *pressure*, *chill*, *návod* 'instructions', *úvod* 'introduction', *chlad* 'chill.n'), legal instruments (*decree*; *patent* 'patent.n', *reglement* 'reglement.n'); however, English has a semantic subgroup where the instrument is a body part (*thumb*, *tongue*, *foot*) which does not appear in the Czech data.

In summary, there is a difference between the languages in the overall frequency of the INSTRUMENT type – almost twice as many pairs were found in the English data than in the Czech data. English seems to form denominal verbs meaning 'to use N' more frequently than Czech, although there do not seem to be competing word-formation processes for this sematic type in either language. The specific conversion pairs of the INSTRUMENT type are presented in Tables 12 and 13.

Event schema	English conversion pairs where the noun is labelled INSTRUMENT	Count
action	*axe*, *ballot*, *bayonet*, *bevel*, *brand*, *clock* 2, *clutch*, *cobble*, *colour*, *contract*, *core*, *curve*, *daub*, *decree*, *festoon*, *foot*, *hawk* 1, *chill*, *chuck* 3, *initial*, *key*, *lag* 2, *lasso*, *mandate*, *paddle* 1, *pall*, *pound* 1, *pressure*, *prickle*, *roll*, *romance*, *sanction*, *sand*, *screen*, *screw*, *scythe*, *shackle*, *slice*, *slip* 3, *slip* 4, *smear*, *snare*, *solder*, *spotlight*, *sprig* 2, *steep*, *swab*, *switch*, *tack*, *tank* 1, *thumb*, *ticket*, *tongue*, *trumpet*, *twitter* 2, *videotape*, *whisk*, *whistle*, *wind* 2	59
transfer	*lease*, *mandate*	2
cognition/perception	*mind*	1
Total		62

Table 12: English conversion pairs in which the noun is labelled INSTRUMENT.

Event schema	Czech conversion pairs where the noun is labelled INSTRUMENT	Count
action	*bas–basovat*, *brus–brousit*, *dekret–dekretovat*, *fáč–fačovat*, *gel–gelovat*, *hlas–hlásit/hlásat*, *chlad–chladit*, *lis–lisovat*, *louh–louhovat*, *multiplex–multiplexovat*, *návod–navádět/navést*, *olej–olejovat*, *patent–patentovat*, *pěch–pěchovat*, *podkop–podkopat/podkopnout*, *podpal–podpalovat/podpálit*, *potah–potahovat/potáhnout*, *pres–presovat*, *pufr–pufrovat*, *reglement–reglementovat*, *rentgen–rentgenovat*, *soustruh–soustružit*, *spoj–spojovat/spojit*, *spoušť–spouštět/spustit*, *sprej–sprejovat*, *štempl–štemplovat*, *telefon–telefonovat*, *úvod–uvodit/uvádět/uvést*, *vosk–voskovat*, *zábal–zabalovat/zabalit*, *závěr–zavírat/zavřít*	31
cognition/perception	*mysl–myslet*	1
Total		32

Table 13: Czech conversion pairs in which the noun is labelled INSTRUMENT.

4.5. Agent

Examples of nouns used in the sense in which they received the AGENT label (or verbs used in the sense in which their corresponding noun received this label) are illustrated in these sentences:

(15) *Vystudoval jsem Vysokou školu zemědělskou, abych **sedlačil**.*
'I studied the university of agriculture to **be a farmer**.'
(*sedlák* denotes the AGENT in the 'action schema' of *sedlačit*)

(16) *That miss would have felt the absence of her fellow **trudge** in clambering stiles and scrambling through hedges.*[36]
(*trudge*.n denotes the AGENT in the 'self-motion schema' of *trudge*.v)

(17) *císař, který se teprve postupně stane **garantem** nebeského i pozemského řádu a pořádku*
'the emperor, who will only gradually become the **guarantee** of heavenly and earthly order'

[36] This example is taken from the *OED* as no example of the noun used in this sense was found in the *BNC*.

(*garant* denotes the AGENT in the 'transfer schema' of *garantovat*)

(18) *a bag of soot purchased from the local chimney* ***sweep*** *was a valuable aid to bug control*
(*sweep*.n denotes the AGENT in the 'caused-motion schema' of *sweep*.v)

This type is more frequent in Czech, where it was assigned to 35 pairs (that is slightly more frequent than the INSTRUMENT type). In English, there are 24 such pairs. In both languages, the verb denotes the 'action schema' in almost all of the pairs, and the pairs mostly have the N>V direction (29 of the 35 Czech pairs, 17 of the 24 English pairs).

Many of the Czech pairs include nouns derived from other nouns (from which the denominal converted verb is then formed), e.g., nouns derived with the suffix *-ník* (*brigáda* 'part-time job' > *brigádník* 'part-time worker' > *brigádničit* 'work part time'; *kostel* 'church' > *kostelník* 'churchman' > *kostelničit* 'to work as a churchman'), *-ař*/*ář* (*holub* 'pigeon' > *holubář* 'pigeon keeper' > *holubařit* 'work as a pigeon keeper'; *cvok* 'lunatic' > *cvokař* 'shrink.n' > *cvokařit* 'to work as a shrink'). These types of denominal verbs are frequent in Czech, and it is even possible to form them from deverbal nouns, e.g., *učit* 'teach' > *učitel* 'teacher' > *učitelovat* 'work as a teacher' (they are not blocked by the existence of the verb because they take on a specific meaning 'to carry out a profession'). In English, derived nouns are said to rarely enter conversion (Marchand, 1969, cited in Bauer, 1983, p. 226), and our data supports this claim – only one pair includes a suffixed noun (*waitress*, with the feminine suffix *-ess*) and two pairs include compound nouns (*co-author*, *co-sponsor*), otherwise they are morphologically simplex nouns or foreign nouns with combining forms (*torment*, *torture*). This is mainly responsible for the difference in the frequency of occurrence of this type between the two languages.

Pairs including a metaphor appear in the data in both languages: *ape*, *křeček* 'hamster' – *křečkovat* 'act like a hamster, be a hoarder'. These include a metaphorical mapping from the domain of animals to the domain of humans (but there is also the Czech *panáček* 'figure.n, man' – *panáčkovat* '(of a dog) stand on hind legs', which includes the opposite mapping from the domain of humans to the domain of animals). There is also a pair in Czech which originates in an eponym (*švejk* 'person who acts like Švejk' > *švejkovat* 'to act like Švejk'; Švejk is a character from a Czech book, famous for making fun of army officials).

There are also 6 V>N pairs where the noun was assigned the AGENT label in Czech (*blekotat* 'bumble.v' – *blekota* 'person who bumbles', *bloudit* 'wander, stray, be lost' – *bloud* 'fool.n', *flinkat* 'slack' – *flink* 'slacker', *ošoustat* 'fuck.v' – *ošoust* 'creep.n', *poskakovat* 'jump around' – *poskok* 'henchman', *suplovat* 'substitute.v'– *supl* 'substitute teacher'). All of them are

colloquial and/or derogatory (cf. the semantic category of "person based on their negatively evaluated behaviour" in Daneš et al., 1967, discussed in Section 2.2.2.1). The English AGENT type nouns do not form any specific semantic subgroups.

In summary, the AGENT label was assigned more frequently in Czech than in English, where it is only the sixth most frequent label. This is mostly due to the high frequency of Czech denominal verbs converted from derived nouns, often meaning 'to carry out a profession denoted by the N'. There is also a semantic subtype of derogatory deverbal nouns denoting AGENT in Czech. Pairs which include the metaphorical transfer from the domain of animals to the domain of humans are possible both in Czech and English, but only one pair appeared in our data for both languages. The specific conversion pairs of the AGENT type are presented in Tables 14 and 15.

Event schema	**English conversion pairs where the noun is labelled AGENT**	**Count**
action	*ape*, *cause*, *co-author*, *cook*, *co-sponsor*, *fly* 2, *ghost*, *hawk* 1, *lag* 1, *nurse*, *patrol*, *poke*, *rat*, *re-write*, *skip* 3, *top*, *torment*, *torture*, *umpire*, *waitress*, *witch*	21
self-motion	*trudge*	1
transfer	*guarantee*	1
caused-motion	*sweep*	1
Total		24

Table 14: English conversion pairs in which the noun is labelled AGENT.

Event schema	**Czech conversion pairs where the noun is labelled AGENT**	**Count**
action	*blázen–bláznit*, *blekota–blekotat*, *bloud–bloudit*, *brigádník–brigádničit*, *bůh–bohovat*, *cvokař–cvokařit*, *děvkař–děvkařit*, *dramaturg–dramaturgovat*, *flink–flinkat*, *holubář–holubařit*, *kamarád–kamarádit*, *kaplan–kaplanovat*, *kibic–kibicovat*, *kostelník–kostelničit*, *křeček–křečkovat*, *kšeftař–kšeftařit*, *lanař–lanařit*, *mistr–mistrovat*, *novinář–novinařit*, *ochotník–ochotničit*, *ošoust–ošoustat*, *panáček–panáčkovat*, *pletichář–pletichařit*, *prezident–prezidentovat*, *primář–primářovat*, *pud–pudit*, *ras–rasovat*, *rebel–rebelovat*, *sedlák–sedlačit*, *sochař–sochařit*, *supl–suplovat*, *švejk–švejkovat*, *voják–vojákovat*	33
self-motion	*poskok*[37]	1
transfer	*garant*	1
Total		35

Table 15: Czech conversion pairs in which the noun is labelled AGENT.

[37] *Poskok* 'henchman' is sometimes considered to be a homonym of *poskok* 'jump.n', because *poskok* 'henchman' is animate and therefore has a different set of inflectional endings than the inanimate *poskok* 'jump.n' (cf. the nominative plural forms *poskokové* 'henchmen' vs. *poskoky* 'jumps.n'). We treat them as two senses of one lexeme because of the semantic connection between the two senses that is analogical, for example, to the different senses of the English *trudge*.n 'action of trudging; one who trudges'.

4.6. Goal, path

We will deal with the pairs where the noun was assigned the GOAL and PATH labels together in this section, as both categories are distinctive elements of motion. Typical motion includes the SOURCE–PATH–GOAL elements, i.e., something usually moves (or is moved) from somewhere, through somewhere, to somewhere. It is notable that in both languages, the noun from the conversion pairs in our data never denotes the SOURCE of movement. This is in accordance with the cognitive principle of the saliency of GOALS over SOURCES. It is cognitively more important where a movement is directed rather than from where. However, the verbs in English with the meaning 'to remove N from somewhere' do profile the beginning stage of movement – even though the noun still denotes THEME and not SOURCE (and so, in our categorization, the distinction from verbs meaning 'to put N somewhere' is lost), it should be noted that these verbs focus on the SOURCE part ('from where') of the 'caused-motion schema', which goes against this general cognitive principle.

Examples of verbs used in the sense in which their corresponding noun received the GOAL label are illustrated in these sentences:

(19) *the man who looks after the bread is **plating** the food out there*
(*plate*.n denotes the GOAL of the 'caused-motion schema' of *plate*.v)

(20) *Richard pokračoval rovně, takže bylo jasné, že **směřuje** do centra.*
'Richard continued straight ahead, so it was clear that he was **heading** to the centre.'
(*směr* denotes the GOAL of the 'self-motion schema' of *směřovat*)

(21) *Brazilian monthly inflation has **topped** 36 per cent*
(*top*.n denotes the GOAL of the 'motion schema' of *top*.v)

The noun denotes GOAL mostly in pairs where the verb denotes the 'caused-motion schema'. In English, there are 25 such pairs, including verbs such as *bench* 'put on a bench', *breast* 'put to one's breast', *plate* 'put on a plate', *ship* 'put on a ship', where the corresponding noun in the conversion pair is a physical location, and verbs like *distance* 'to put at a distance', *target* 'to aim at, move towards a target', *sally* 2 'to bring a bell to the sally position', where the noun is an abstract location. Some verbs denote imaginary motion, e.g., *climax* 'bring something to a climax', *end* 'bring something to an end'. Several verbs are verbs of writing – then the noun denotes the place where something is written, e.g., *foot* 'to write the sum at the foot of the page', *manifest* 'to put on a manifest (the list of a ship's cargo)', *slip* 4 'to write something on a slip'.

There are also 3 pairs where the verb denotes self-motion and 3 pairs where the verb denotes motion.

In contrast, the GOAL type is minor in Czech with only 6 pairs (*garáž* 'garage.n' – *garážovat* 'put into a garage', *láhev* 'bottle.n' – *lahvovat* 'bottle.v', *registr* 'register.n' – *registrovat* 'put on a register', *směr* 'direction' – *směrovat* 'direct.v', *směr* 'direction' – *směřovat* 'be directed, head somewhere'. The semantic subtypes seem to be the same as in English, but the pairs are fewer in number. Here, it does not seem that competition with another word-formation process is at play; rather, Czech may prefer to use syntactic V + PP combinations (e.g., *dát na talíř* 'put on a plate' instead of forming a verb from *talíř* 'plate.n') to express this meaning, but this suggestion would, again, have to be verified on data.

Examples of nouns used in the sense in which they received the PATH label (or verbs used in the sense in which their corresponding noun received this label) are illustrated in these sentences:

(22) *A quick shift of weight, and he **angled** the bike over the gravel edge*
(*angle*.n denotes the PATH in the 'caused-motion schema' of *angle*.v)

(23) *Musí to být na malostranském **přístupu** ke Karlovu mostu*
'It has to be on the Malá Strana **access** to the Charles Bridge'
(*přístup* denotes the PATH in the 'self-motion schema' of *přistupovat*/*přistoupit*)

(24) *He looked ahead to where the road **curved** openly up to the left*
(*curve*.n denotes the PATH in the 'motion schema' of *curve*.v)

(25) *Ve zdi musel být nějaký **průhled**, do kterého upřeně zíral.*
'There must have been an **opening** in the wall, into which he was staring'
(*průhled* denotes the path in the 'perception schema' of *prohlédnout*)

Pairs in which the noun denotes PATH are not very frequent in English (17 pairs) and minor in Czech (5 pairs). In English, the noun either denotes the literal physical route of movement (*access*, *ford*, *walk*) or the angle / abstract path of movement (*angle*, *arc*, *curve*). In the Czech pairs, the nouns denote physical routes (*nájezd* 'connecting lane', *přístup* 'access route', *splav* 'sluice', *výtok* 'issue, the place through which water flows out') and there is also one case where the verb does not denote motion, but perception (*průhled* 'opening through which one can look out').

We should note that as far as verbs of motion are concerned, there are rather few pairs in which the verb was assigned the 'motion schema' label overall in both languages. This type is rare especially in Czech with only 9 pairs (vs. 32 in English). The reason for this difference is the fact that in Czech, verbs denoting spontaneous motion without an instigating AGENT usually include the reflexive pronoun *se*/*si*. There were originally additional 13 pairs in the Czech data including the reflexive pronoun, which we had to remove: *kyv* 'swing.n' – *kývat se* 'swing.v', *odklon* 'turn.n away' – *odklonit*/*odklánět se* 'turn.v away', *prach* 'dust.n' – *prášit se* 'be dusty', *přeliv* 'overflow.n' – *přelévat*/*přelít se* 'flow over', *příval* 'inrush' – *přivalit se* 'rush in', *rozkyv* 'swing.n' – *rozkývat se* 'swing.v', *úklon* 'inclination' – *uklonit*/*uklánět se* 'incline.v', *výlev* 'outflow' – *vylévat*/*vylít se* 'flow out', *výkyv* 'swing.n' – *vykývnout se* 'swing.v', *výzdvih* 'lift.n' – *vyzdvihovat*/*vyzdvihnout se* 'lift.v up', *záškub* 'twitch.n' – *zaškubat*/*zaškubnout se* 'twitch.v', *zákrut* 'bend.n' – *zakroutit se* 'bend.v'.

To summarize, out of the SOURCE–PATH–GOAL triad of elements typical for all three types of motion schemata ('caused-motion schema', 'self-motion schema', 'motion schema'), the GOAL label was assigned to the noun the most frequently in both languages (specifically in the 'caused-motion schema'), although in Czech, it is a minor type overall. The PATH label was not assigned very frequently in either language, but it is still more frequent in English, while in Czech, it is a completely minor type. The SOURCE label was not assigned in either language. The specific conversion pairs of the GOAL and PATH type are presented in Tables 16, 17, 18 and 19.

Event schema	**English conversion pairs where the noun is labelled GOAL**	**Count**
caused-motion	*bench*, *breast*, *climax*, *dish*, *distance*, *end*, *foot*, *grade*, *manifest*, *pigeonhole*, *place*, *plate*, *port* 1, *port* 4, *pot*, *pound* 2, *sally* 2, *sand*, *screen*, *ship*, *slip* 1, *slip* 4, *table*, *tank* 1, *target*	25
self-motion	*bench*, *dive*, *top*	3
motion	*climax*, *end*, *top*	3
Total		31

Table 16: English conversion pairs in which the noun is labelled GOAL.

Event schema	**Czech conversion pairs where the noun is labelled GOAL**	**Count**
caused-motion	*garáž–garážovat*, *láhev–lahvovat, registr–registrovat*, *směr–směrovat*	4
self-motion	*směr–směřovat*	1
motion	*směr–směřovat*	1
Total		6

Table 17: Czech conversion pairs in which the noun is labelled GOAL.

Event schema	English conversion pairs where the noun is labelled PATH	Count
caused-motion	*angle*, *by-pass*, *curve*	4
self-motion	*access* 1, *angle*, *arc*, *by-pass*, *curve*, *ford*, *skirt*, *walk*	8
motion	*angle*, *bevel*, *issue*, *meander*, *sweep*	5
Total		17

Table 18: English conversion pairs in which the noun is labelled PATH.

Event schema	Czech conversion pairs where the noun is labelled PATH	Count
caused-motion	*splav–splavovat*/*splavit*	1
self-motion	*nájezd–najíždět*/*najet*, *přístup–přistupovat*/*přistoupit*	2
motion	*výtok–vytékat*/*vytéct*	1
cognition/perception	*průhled–prohlédnout*	1
Total		5

Table 19: Czech conversion pairs in which the noun is labelled PATH.

4.7. Instance of process

Nouns which denote INSTANCE OF PROCESS are analogical to those denoting INSTANCE OF ACTION in that the noun denotes the event schema as a whole. But in this case, it is not a voluntary action performed by an AGENT, but a spontaneous happening, represented by the 'occurrence schema' (spontaneous process) and 'motion schema' (spontaneous motion). Examples of nouns in the sense in which they received the INSTANCE OF PROCESS label are illustrated in these sentences:

(26) *zářícího v bělavých a plavých tónech uzrálého letního slunečního* ***žehu***
'shining in the white and fair tones of the ripe summer **burn** of the sun'
(*žeh* denotes the INSTANCE OF PROCESS in the 'occurrence schema' of *žhnout*)

(27) *The rain was briefly rather more solid in the early afternoon, but most of the time it was a minor* ***sprinkle****.*
(*sprinkle*.n denotes the instance of process in the 'motion schema' of *sprinkle*.v)

This type is about equally frequent in both languages (15 pairs in English, 17 pairs in Czech). The nouns denote natural physical processes (*blesk* 'lightning', *zámrz* 'icing.n over'), emission of light (*gleam*, *blyskot* 'glimmer.n', *záblesk* 'flash.n'), processes of decay/death (*exit* 'death', *skon* 'death', *úhyn* 'death') or disease (*fester*, *haemorrhage*), or spontaneous motion (*ebb*, *issue*, *drift* 'drift.n', *zákmit* 'oscillation'). Compared to the extremely high frequency of converted

nouns denoting INSTANCE OF ACTION in the 'action schema', converted nouns denoting INSTANCE OF PROCESS in the 'occurrence schema' are more marginal. This result is in accordance with Adams' (2011, pp. 28–29) claim that converted nouns of this type mostly denote voluntary actions.

As with the pairs where the verb denotes the 'motion schema', other pairs where the verb denotes the 'occurrence schema' were originally in the Czech part of the data – in some of them, the noun denoted RESULT, in some of them INSTANCE OF PROCESS. However, they were excluded due to the fact that the verb only exists with the reflexive pronoun *se*/*si* (*ozývat se* 'echo.v', *potit se* 'sweat.v', *roztéct se* 'melt.v') or only appears in the 'spontaneous process' meaning with the reflexive pronoun *se*/*si* (*stáhnout se* 'contract.v'), and therefore is only included under the 'caused-motion schema' type.

The specific conversion pairs of the INSTANCE OF PROCESS type are presented in Tables 20 and 21.

Event schema	**English conversion pairs where the noun is labelled INSTANCE OF PROCESS**	**Count**
occurrence	*fester*, *gleam*, *haemorrhage*, *misfire*, *moult*, *shiver* 2	6
motion	*crossover*, *ebb*, *gust*, *issue*, *pelt* 1, *roll*, *slip* 1, *sprinkle*, *wobble*	9
Total		15

Table 20: English conversion pairs in which the noun is labelled INSTANCE OF PROCESS.

Event schema	**Czech conversion pairs where the noun is labelled INSTANCE OF PROCESS**	**Count**
occurrence	*blesk–blesknout/bleskat*, *blyskot–blyskotat*, *exit–exitovat*, *náběh–nabíhat/naběhnout*, *nárůst–narůstat/narůst*, *skon–skonat*, *tep–tepat*, *úhyn–uhynout*, *záblesk–zablesknout*, *zámrz–zamrzat/zamrznout*, *zvuk–zvučet*, *žeh–žhnout*	12
motion	*drift–driftovat*, *průnik–pronikat/proniknout, úkap–ukapávat/ukápnout*, *výtok–vytékat/vytéct*, *zákmit–zakmitat*	5
Total		17

Table 21: Czech conversion pairs in which the noun is labelled INSTANCE OF PROCESS.

4.8. Degree

Examples of nouns in the sense in which they received the DEGREE label (or verbs used in the sense in which their corresponding noun received this label) are illustrated in these sentences:

(28) *cunning boy who was good enough to get high marks without apparently doing a **lick** of work*
(*lick*.n denotes the degree in the 'action schema' of *lick*.v)

(29) *Mustang P-51 s přídavnými nádržemi měl **dolet** přes 2 700 kilometrů*
'Mustang P-51 with added tanks had the **flying range** of 2 700 kilometres'
(*dolet* denotes the degree in the 'self-motion schema' of *doletět*/*dolétat*/*dolétnout*)

(30) *he **inched** his bound hands forward*
(*inch*.n denotes the degree in the 'caused-motion schema' of *inch*.v)

The DEGREE label was not assigned very frequently in either language (13 pairs in English, 8 pairs in Czech) and it appears in pairs where the verb denotes the 'action schema' or some type of motion. In the DEGREE type, the noun denotes an amount, measure or range (e.g., *lick* 'a quantity that may be had by licking, a small amount', *roll* 'a fixed measure of rolled material; a rolled up quantity of a drug', *search* 'the range, scope of searching', *sprinkle* 'quantity of something sprinkled; a small number or quantity', *dolet* 'maximum distance that a plane is able to fly', *hlt* 'the amount of liquid that it is possible to swallow', *náběh* 'the amount of game that runs up for the hunter to shoot', *prořez* 'the amount of material that is lost during sawing', *výkon* 'the amount of work done in a given time').

The specific conversion pairs of the DEGREE type are presented in Tables 22 and 23.

Event schema	**English conversion pairs where the noun is labelled DEGREE**	**Count**
action	*batch*, *inch*, *lag* 1, *lick*, *roll*, *search*, *spend*, *stint*	8
self-motion	*inch*	1
motion	*slip* 1, *sweep*	2
caused-motion	*inch*, *sprinkle*	2
Total		13

Table 22: English conversion pairs in which the noun is labelled DEGREE.

Event schema	**Czech conversion pairs where the noun is labelled DEGREE**	**Count**
action	*hlt–hltat*, *nástřel–nastřílet*/*nastřelovat*/*nastřelit*, *prořez–prořezat*/*proříznout*, *výkon–vykonat*	4
self-motion	*dolet–doletět*/*dolétat*/*dolétnout*, *náběh–nabíhat*/*naběhnout*, *předstih–předstihovat*/*předstihnout*	3
motion	*průnik–pronikat*/*proniknout*	1
Total		8

Table 23: Czech conversion pairs in which the noun is labelled DEGREE.

4.9. Other minor types

The remaining labels were assigned to less than 10 pairs in both language samples. They include MEANS, MANNER, LOCATION, TIME, POSSIBILITY OF ACTION, EMOTION, CAUSE, EXPERIENCER and CONCEPT/PERCEPT.

In Czech, there is only 1 pair where the noun denotes MEANS of movement (*vůz* 'carriage' – *vozit*/*vézt* 'carry, drive'), while there are 9 such pairs in English, either denoting a vehicle (*ship*, *skateboard*, *tank*), instrument for moving a vehicle (*paddle* 1) or a body part (*foot*, *muscle*, *tiptoe*).

Pairs where the noun denotes MANNER (e.g., *look* 'the way someone looks', *přístup* 'the way someone approaches something'), LOCATION (e.g., *table* 'to sit and eat at a table', *stanovat* 'to stay in a tent') and TIME (e.g., *season* 'to let ripen for several seasons', *nocovat* 'to spend the night') did not appear more than 5 times in either language.

The noun denotes the POSSIBILITY OF ACTION in only one English pair (*access* 'the possibility to access something') and in 3 Czech pairs, one of them being a translation counterpart of the English pair (*přístup* 'the possibility to access something' as in "Má někdo dovnitř přístup?" 'Does anyone have access inside?'), the other two being *výběr* 'the possibility to choose, a selection' as in "V hospodě skutečně měli slušný výběr minutek." 'They really had a good selection of meals in the pub.', and *výhled* 'the possibility to look out, a view' as in "v hotelu s výhledem na jezero" 'at a hotel with a view of the lake'.

The noun can denote the EXPERIENCER, EMOTION or CAUSE in pairs where the verb denotes the 'emotion schema'. The noun mostly denotes the EMOTION (*distress*, *favour*, *panic*, *rage*, *want*, *pocit* 'feeling.n'), the only exception being one pair in English (*want* can also mean 'the thing which is needed, wanted', and therefore the noun can also denote the CAUSE).

In pairs where the verb denotes the 'cognition/perception schema', the noun can denote the EXPERIENCER (this only appears in one English pair in our data: *witness*) or the CONCEPT/PERCEPT (*purpose*, *výmysl* 'invention', *zámysl* 'intention'). The last 5 types are completely minor, as the 'emotion schema' was only denoted by 6 verbs in the English sample and 3 verbs in the Czech sample, and the 'cognition/perception schema' was only denoted by 10 verbs in the English sample and 7 verbs in the Czech sample.

4.10 Polysemy

So far, we have examined the individual senses (i.e., the categorical meanings defined using the elements of the event schemata) of the conversion pairs in isolation. In this section, we will look at the nouns and verbs in conversion pairs as whole lexemes and examine the different combinations of element labels that appear for nouns in the conversion pairs in the data. We will investigate whether the Czech and English samples differ in the number of pairs with more than one element label, as well as the patterns of element labels that appear together.[38]

4.10.1 Number of element labels

In the English sample, 171 out of the 300 pairs have only one element label, while in the Czech sample, it is 253 out of the 300. In other words, almost a half of the English pairs have more than one element label, while this is true for only about a sixth of the Czech pairs. Table 24 shows how many conversion pairs in each language sample have each number of element labels.

Number of element labels assigned to the conversion pair	**Number of conversion pairs in English**	**Number of conversion pairs in Czech**
1 element	171	253
2 elements	90	35
3 elements	30	11
4 elements	5	1
5 elements	4	0
Total	300	300

Table 24: Number of pairs with each number of element labels in the Czech and English sample.

The difference between both language samples is quite clear. The English conversion pairs have up to 5 different element labels, while in the Czech data, only one pair has 4 and the rest have only up to 3. Also, the number of pairs with 2 and 3 element labels is almost three times higher in English than in Czech. This indicates that polysemy is not only more diverse, but also more plentiful in English V/N conversion compared to Czech V/N conversion.

[38] In this section, in cases where the noun has an element label (e.g., PATH) related to several different event schemata (e.g., PATH in the 'self-motion schema', PATH in the 'caused-motion schema'), it is not considered to have multiple element labels.

4.10.2 Combinations of element labels

In the English sample, there is a total of 71 different combinations of element labels that an individual conversion pair can have. Out of the 71, 14 are those with only one element label, and 57 are those with several element labels. In the Czech sample, there is a total of 36 different combinations, 17 with only one element label and 19 with several labels.

Clearly, the situation is quite different in each of the languages. Firstly, English has almost twice as many types of combinations overall. This indicates that the semantic diversity of conversion is wider in the English data than in the Czech data. Also, only about a fifth of these combinations are those with only one element label, while in the Czech sample, they account for almost a half of all the possible combinations. There are significantly more types of combinations of multiple element labels that one conversion pair can have in English.

There are 10 combinations of more than one element label which appear in both languages (although the numbers of pairs which were assigned each combination differ in the two language samples). They are shown in the following Table 25.

Pattern	**English example**	**Number of English pairs with the pattern**	**Czech example**	**Number of Czech pairs with the pattern**
INSTANCE OF ACTION, THEME	*transplant*.v – *transplant*.n 'action of transplanting' / 'organ that is transplanted'	14	*importovat* 'import.v' – *import* 'action of importing' / 'goods that are imported'	3
INSTANCE OF ACTION, RESULT	*rebuild*.v – *rebuild*.n 'action of rebuilding' / 'result of rebuilding'	9	*vrtat*/*vrtnout* 'drill.v' – *vrt* 'action of drilling' / 'result of drilling'	20
RESULT, THEME	*award*.v – *award*.n 'the result of awarding (judicial sentence)' / 'what is given in awarding somebody'	9	*vsypat* 'pour in' – *vsyp* 'the result of pouring in (layer)' / 'what is poured in (material)'	1
INSTANCE OF ACTION, INSTRUMENT	*whisk.v* – *whisk*.n 'action of whisking' / 'instrument used for whisking'	6	*podpalovat*/*podpálit* 'ignite' – *podpal* 'action of igniting' / 'what is used for igniting'	3
INSTANCE OF ACTION, DEGREE	*lick*.v – *lick*.n 'action of licking' / 'amount that may be had by licking'	4	*hltat* 'swallow.v' – *hlt* 'action of swallowing' / 'amount that can be swallowed'	2
INSTANCE OF ACTION, AGENT	*cook*.v – *cook*.n 'action of cooking' / 'who cooks'	4	*poskakovat*/*poskočit* 'jump.v' – *poskok* 'action	1

			of jumping' / 'who jumps around, henchman'	
INSTANCE OF PROCESS, RESULT	*fester*.v – *ferster*.n 'the process of festering' / 'the result of festering'	4	*zamrzat*/*zamrznout* 'freeze' – *zámrz* 'process of freezing' / 'result of freezing (ice)'	1
INSTRUMENT, RESULT	*smear*.v – *smear*.n 'what is used for smearing' / 'result of smearing'	3	*chladit* 'to use the cold (to cool something)' / 'to create cold, to chill' – *chlad* 'cold.n'	2
INSTANCE OF ACTION, INSTRUMENT, RESULT	*slice*.v – *slice*.n 'action of slicing' / 'what is used for slicing' / 'result of slicing'	3	*rentgenovat* 'x-ray.v' – *rentgen* 'what is used in x-raying' / 'action of x-raying' / 'result of x-raying'	1
INSTANCE OF ACTION, PATH	*meander*.v – *meander*.n 'action of meandering' / 'path of meandering'	1	*najíždět*/*najet* 'drive.v' – *nájezd* 'action of driving' / 'path of driving (a connecting lane)'	2

Table 25: Combinations of more than one element label which appear in both language samples.

39 of the total of 71 combinations of elements in the English sample appear only once. In the Czech sample, this is true for 18 of the 36 combinations. This means that in the English sample, more than a half of the combinations was assigned only to one conversion pair, and in the Czech sample, this is true for half of the combinations. Most of these unique combinations are those with several element labels (35 in English, 11 in Czech). This may indicate a wide variety of possible patterns of polysemy in V/N conversion in both languages, but it may also simply indicate that the categorization which we use is too fine grained or the sample is too small to reveal how these patterns are systematically used. All patterns of elements which were assigned to at least 5 conversion pairs in at least one of the language samples are shown in Table 26.

Pattern	**Number of pairs in the English sample**	**Example from English**	**Number of pairs in the Czech sample**	**Example from Czech**
INSTANCE OF ACTION	58	*assault*.v – *assault*.n 'action of assaulting'	94	*doprodávat*/*doprodat* 'sell out' – *doprodej* 'action of selling out'
RESULT	31	*sculpture*.v 'make a sculpture' – *sculpture*.n	49	*moštovat* 'make juice' – *mošt* 'juice.n'
THEME	24	*inset*.v 'to put an inset somewhere' – *inset*.n	21	*čipovat* 'put a chip somewhere' – *čip* 'chip.n'

INSTRUMENT	23	*axe*.v ‘to use an axe’ – *axe*.n	25	*brousit* ‘to use a grindstone’ – *brus* ‘grindstone’
INSTANCE OF ACTION, THEME	14	*transplant*.v – *transplant*.n ‘action of transplanting’ / ‘organ that is transplanted’	3	*importovat* ‘import.v – *import* ‘action of importing’ / ‘goods that are imported’
AGENT	10	*umpire*.v ‘to act as an umpire’ – *umpire*.n	34	*bláznit* ‘to act as a lunatic’ – *blázen* ‘lunatic’
RESULT, THEME	9	*award*.v – *award*.n ‘the result of awarding (judicial sentence)’ / ‘to give somebody an award’	1	*vsypat* ‘pour in’ – *vsyp* ‘the result of pouring in (layer)’ / ‘what is poured in (material)’
INSTANCE OF ACTION, RESULT	9	*rebuild*.v – *rebuild*.n ‘action of rebuilding’ / ‘result of rebuilding’	20	*vrtat*/*vrtnout* ‘drill.v’ – *vrt* ‘action of drilling’ / ‘result of drilling’
GOAL	8	*place*.v ‘to put something to a place’ – *place*.n	5	*registrovat* ‘to put something into a register’ – *registr* ‘register.n’
INSTANCE OF ACTION, INSTRUMENT	6	*whisk*.v – *whisk*.n ‘action of whisking’ / ‘instrument used for whisking’	3	*podpalovat*/*podpálit* ‘ignite’ – *podpal* ‘action of igniting’ / ‘what is used for igniting’
INSTRUMENT, THEME	6	*swab*.v ‘to use a swab’ / ‘to put a swab into an oil well’ – *swab*.n	0	–
INSTANCE OF PROCESS	5	*ebb*.v – *ebb*.n ‘the process of ebbing’	12	*driftovat* ‘drift.v’ – *drift* ‘the process of drifting’

Table 26: Combinations of element labels which appear for at least 5 conversion pairs in at least one sample.

Almost a third (94) of the Czech pairs were only assigned the label INSTANCE OF ACTION. Another 49 pairs were assigned only the label RESULT, and these two labels together were assigned to another 20 pairs. This means that in 163, that is more than a half of the 300 Czech pairs, the noun denotes either INSTANCE OF ACTION, RESULT, or both (and no other element). In English, this is only the case for 98 pairs, i.e., a little less than a third of the data.

The THEME and INSTRUMENT labels in English appear in combination with another label (or multiple other labels) more often than alone. THEME appears as the only label in the given pair 24 times out of the total of 95 times that it was assigned. INSTRUMENT appears as the only label

23 times out of the total of 63 times that it was assigned. In contrast, in the Czech sample, THEME and INSTRUMENT mostly appear as the only label for a given conversion pair (21 out of the 25 times that it was assigned for THEME, 24 out of the 32 times that it was assigned for INSTRUMENT).

In the pairs which have the INSTANCE OF ACTION label combined with another label, it is assumed that the actional meaning of the noun is primary and the other meanings developed from it through semantic shift (cf. for example the accounts of the semantics of V>N conversion in Czech in Section 2.2.2, or Cetnarowska, 1993, p. 117). The semantic shift from an actional meaning to a resultative meaning seems to be quite productive in Czech. In the English sample, the combination of INSTANCE OF ACTION and THEME (assigned 14 times) and INSTANCE OF ACTION and INSTRUMENT (assigned 6 times) seems to be productive as well.

Overall, it is difficult to give one single reason why the conversion pairs in the English data have multiple element labels more often than the pairs in the Czech data. It is the combination of polysemy in both the verbs and the nouns in the conversion pairs which leads to the assignment of multiple labels. Verbs can often denote more than one event schema, for example *bypass*.v can denote the 'self-motion schema', the 'caused-motion schema' and the 'action schema', and because different event schemata include different elements, this can lead to the assignment of different element labels to the noun. The entity denoted by the noun can be a participant in more than one prototypical event, and therefore can denote several different elements in the event schema of the converted verb (e.g., *bench*.v can mean 'to create a bench' (RESULT), 'to put a bench somewhere' (THEME), 'to seat someone/oneself on a bench' (GOAL)). Also, several meanings of one polysemous noun can denote different entities which participate in different events, e.g., *plate*.n can mean a metal plate (and *plate*.v means 'to put metal plates somewhere') or a dish (and *plate*.v means 'to put something on a plate'). Finally, one noun can denote several different elements of the same event schema (e.g., *slice*.n can mean 'the action of slicing', 'the instrument of slicing' or 'the result of slicing'). The combination of all of these mechanisms leads to multiple semantic relations existing between the noun and the verb in one conversion pair. Our data indicate that these mechanisms are more limited in Czech than in English V/N conversion.

5. Conclusion

In this thesis, we have suggested a way of classifying the semantic relations between nouns and verbs in conversion pairs using general cognitive categories based on the conceptualization of events. We assumed that a generalized schema of an event underlies the verb's meaning and that one of the elements of the schema (or the schema as a whole) is designated by the noun.

In some of the previous classifications of V/N conversion which we have reviewed in the theoretical part of this thesis, the semantic categories were based on the syntactic or semantic roles that the noun has in a paraphrase of the verb's meaning – cf. Marchand's (1969, pp. 368, 374) claim that "deverbal substantives are nominalized sentences" and "denominal verbs are verbalized sentences" and his categorization based on the noun's syntactic role in these sentences, or Cetnarowska's (1993, p. 105) claim that "action nouns are construed as absorbing theta-roles listed in thematic grids carried out by corresponding verbs". In cognitive accounts of conversion as metonymy, the level on which the semantic relation between the noun and the verb is analysed is not that of the surface syntactic structure or the semantic roles of the verb's arguments, but the conceptual level of generalized situations and their elements. These cognitive accounts directly influenced the semantic classification proposed in this thesis.

Our classification had the aim to achieve a constant level of abstraction across categories and to have clear, cognitively based criteria for postulating the categories. Meanings of the verbs and nouns were mapped onto event schemata and their elements, which allowed us to abstract from the more subtle shades of lexical meaning. However, it may be argued that the list of event schemata presented in *Cognitive English Grammar* (Radden & Dirven, 2007) deals with some types of situations in more detail than with others – for example, there are 3 different event schemata postulated for different types of motion, but only one event schema postulated for both states and spontaneous processes (with and without results). It may be questioned whether this truly reflects our conceptualization of events, or whether it merely reflects the fact that cognitive linguistics has dedicated a lot of attention to the description of verbs of motion.

Despite these reservations, we have taken the set of event schemata and their elements from *Cognitive English Grammar* without changes, so that the classification is comparable with other works. The semantic categories based on this set proved to be applicable on corpus data and we have tried to demonstrate their usefulness for cross-linguistic comparison.

In the comparison of the semantic relations between nouns and verbs in Czech and English conversion pairs, we found that the same set of labels was applicable to both languages, but that

the labels were used with different frequencies in each sample. The most important differences between Czech and English were found in pairs where the noun denotes:

- THEME: This type is more frequent in the English sample. In the 'action schema', the nouns' meanings in the Czech sample are basically limited to 'the thing consumed' (e.g., *cumel* 'candy' – *cumlat* 'suck.v'), whereas in English, nouns denoting a human patient (e.g., *initiate*), material picked (e.g., *mushroom*), animal caught (e.g., *rat*) or thing held (e.g., *clutch*) were also found. In the 'caused-motion schema', several English pairs where the verb means 'to remove N' were found (e.g., *husk*), whereas none was found in the Czech sample. In the 'motion schema', several pairs where the verb means 'to move like N' were found in the English data (e.g., *screw*), whereas none were found in the Czech data.
- INSTRUMENT: This type is more frequent in the English sample. English seems to form denominal converted verbs meaning 'to use N' (e.g., *bayonet*) more frequently than Czech, although the same semantic subtypes were found in both language samples (with the exception of conversion pairs where the noun denotes a body part (e.g., *tongue*), which was found only in the English sample).
- AGENT: This type is more frequent in the Czech sample. Many denominal verbs converted from derived nouns were found in the Czech sample (e.g., *kostelník* 'churchman' – *kostelničit* 'to work as a churchman'), whereas in the English sample, these were marginal. Also, the Czech sample includes a semantic subgroup of deverbal nouns which designate a person based on their negatively evaluated behaviour (e.g., *blekotat* 'bumble.v' – *blekota* 'person who bumbles').
- GOAL: This type is more frequent in the English sample. The conversion pairs mostly feature denominal verbs meaning 'to put something onto/into N' (e.g., *plate*), indicating that these are formed more frequently in English than in Czech.
- MEANS: Only one pair where the verb means 'to move using N' was found in the Czech data, whereas several were found in English (e.g., *skateboard*). This indicates that these verbs are formed more frequently in English.

On the other hand, similarities were also found between the two languages. The noun was found to have the meaning of INSTANCE OF ACTION the most often, followed by the meaning of RESULT, which suggests that these meanings are the most prevalent in V/N conversion in both Czech and English. Also, some possible meanings were not found in either of the two language samples, for example the noun never had the meaning of the SOURCE of movement.

The analysis revealed that due to polysemy, there are often multiple semantic relations between the noun and the verb in one conversion pair. This is true for almost half of the pairs in the English sample (129). In the Czech sample, it was only about a sixth of the pairs (47). This suggests that multiple semantic relations are much more frequent in English V/N conversion pairs than in Czech V/N conversion pairs.

The patterns of multiple semantic relations are also more varied in the English sample (57 patterns) than in the Czech sample (19 patterns). In more than half (163) of the Czech pairs the noun denotes either the INSTANCE OF ACTION, the RESULT, or both. The combination of these two semantic relations was shown to be the only productive pattern of polysemy in the Czech data, while in the English data, the combinations of INSTANCE OF ACTION + THEME, INSTANCE OF ACTION + INSTRUMENT, INSTRUMENT + THEME and RESULT + THEME were also somewhat productive.

Overall, many of the combinations of multiple relations appeared only once in the sample (35 in English, 11 in Czech). This may be an effect of the sample being too small, the classification being too fine grained, or perhaps simply the fact that we worked with dictionary definitions to determine the meanings of the words in our data. Some of the words may not be used very frequently in some of the senses recorded in the dictionary, and so perhaps if we worked with corpus concordances instead and annotated the semantic relations based only on the meanings in which words were used in the corpus, we would get different results.

The large variety of patterns of multiple semantic relations and the high number of unique ones (especially in the English sample) also points to the wide range of possible meanings that converted nouns and verbs can express, repeatedly commented upon in previous accounts of conversion. In derivation, the meaning of the base combines with the meaning of the derivational affix, and so, despite the polysemy of derivational affixes, the possible meanings of the resulting word are more limited than in conversion, where no derivational affix is used. Lieber (2005) even takes the wide range of possible meanings that converted verbs can have as an argument for treating conversion as a type of lexical coinage. We believe that although the meanings of converted nouns and verbs were shown to be extremely varied, there are systematic semantic relations between the converted words and their motivating words in the conversion pairs. In the cognitive approach, these relations seem to be of the same type as those in derivation – for example, Janda's (2011) analysis of words formed by suffixation seems to suggest that a similar semantic analysis based on similar conceptual categories as we used in our analysis of conversion is possible for derivation.

We have not examined the competition of conversion with other word-formation processes in this thesis, we merely suggested during the analysis that competition may be responsible for some of the observed differences in the frequency of some of the semantic categories in the English and Czech data. Although conversion is the primary means of forming denominal verbs in both languages, in English it competes with suffixation by *-ify*, *-ize* and *-ate*, while in Czech there are not any productive derivational suffixes for forming verbs (Dokulil, 1982a, p. 3l), and so the only other word-formation process used to form denominal verbs is the combination of conversion with prefixation and/or reflexivization. Conversion from verbs to nouns competes with derivation by a variety of different derivational suffixes in both languages. Previous authors have examined the competition of different word-formation processes for forming nouns and verbs belonging to different semantic categories in English (e.g., Cetnarowska, 1993, pp. 112–117; Gottfurcht, 2008; Valera, 2020; Mititelu, 2021). Further research into how this competition operates in English and Czech may elucidate some of the mechanisms responsible for the differences in the frequency of the various semantic relations between nouns and verbs in conversion pairs discovered in this thesis.

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Resumé

Předmětem této diplomové práce jsou dvojice substantiv a sloves, ve kterých je buď substantivum utvořené ze slovesa, nebo sloveso utvořené ze substantiva pomocí slovotvorného procesu konverze, např. *run*.v 'běžet/běhat' – *run*.n 'běh', *salt*.n 'sůl' – *salt*.v 'solit' v angličtině a *běžet*/*běhat–běh*, *sůl–solit* v češtině. Hlavním cílem bylo porovnat diverzitu sémantických vztahů, které mohou existovat mezi substantivy a slovesy v těchto konverzních dvojicích v angličtině a v češtině. Sémantické vztahy jsme klasifikovali na základě obecných kognitivních kategorií. Na vzorku 300 konverzních párů v každém jazyce jsme porovnali, které kategorie vyjadřují substantiva v konverzních párech v češtině a v angličtině, a také jak často je v jedné konverzní dvojici vyjádřen více než jeden sémantický vztah. Výsledky ukázaly že se oba jazyky liší v tom, jak často substantivum z konverzního páru vyjadřuje některé sémantické kategorie, a také výrazně větší četnost a rozmanitost kombinací více různých sémantických vztahů v rámci jednoho konverzního páru v angličtině.

V teoretické části práce jsou shrnuty hlavní přístupy ke konverzi v angličtině a češtině se zaměřením na konverzi mezi substantivy a slovesy. V angličtině se konverze většinou definuje pomocí kritéria identické formy a změny slovního druhu, ale přístupy se liší tím, zda je konverze považována za slovotvorný proces, nebo za pouhé užití formy s nespecifikovaným slovním druhem v různých funkcích. Pokud je konverze považována za slovotvorný proces, může být pojímána jako druh derivace s použitím nulového slovotvorného afixu, nebo jako samostatný slovotvorný proces, při němž se slovotvorné afixy nevyužívají. Pozornost je věnována také určování směru konverze, což je často problematické právě kvůli absenci derivačních afixů.

Konverze v češtině se liší od konverze v angličtině tím, že vzhledem k morfologickým charakteristikám češtiny substantivum a sloveso v konverzní dvojici nesplňují podmínku formální identity – slova patřící do různých slovních druhů totiž obsahují flektivní afixy (u sloves kmenotvorný sufix a koncovku, u substantiv koncovku), které jsou ve většině případů formálně vyjádřeny i ve slovníkovém tvaru slova. Stejně jako v angličtině se však při konverzi nevyužívá žádných slovotvorných afixů. V této práci přistupujeme ke konverzi z jazykově srovnávacího hlediska a považujeme ji za stejný proces, který se projevuje různě v typologicky různých jazycích.

V české lingvistické tradici se pro proces tvoření slov typu *běžet*/*běhat–běh*, *sůl–solit* kromě termínu konverze používá také termín transflexe. Existují i rozdíly v pojetí tohoto procesu –

buď je popisován jako bezafixální derivace, při které je slovotvorným formantem pouze změna tvaroslovného paradigmatu (vyjádřeného novým souborem flektivních afixů), nebo je flektivní afix pojímán zároveň jako afix slovotvorný (tedy má dvojí funkci – flektivní a slovotvornou).

V teoretické části práce je zvláštní pozornost věnována existujícím sémantickým klasifikacím konverze mezi slovesy a substantivy v angličtině a češtině. V angličtině jsou klasifikace často založeny na parafrázi významu motivovaného slova pomocí slova motivujícího, u sloves konvertovaných ze substantiv také na syntaktické nebo sémantické roli substantiva v této parafrázi. V práci popisujeme klasifikace následujících autorů: Marchand (1969), Adams (1973), Clark a Clark (1979), Plag (1999), Cetnarowska (1993). V češtině jsou sémantické klasifikace sloves a substantiv vytvořených konverzí součástí obecné klasifikace deverbálních substantiv a denominálních sloves. Sémantické kategorie jsou definovány na základě odlišných kritérií v různých mluvnicích. V *Mluvnici češtiny 1* (Dokulil et al., 1986) jsou deverbální substantiva klasifikována na základě obecných onomaziologických kategorií a denominální slovesa na základě významu motivujícího substantiva a poté na základě parafráze významu utvořeného slovesa. Ve *Velké akademické gramatice spisovné češtiny* (Štícha et al., 2018) se v klasifikaci deverbálních substantiv a denominálních sloves kombinují různorodá kritéria, jako např. způsob slovesného děje, stylová charakteristika, obecný význam utvořeného slova a počet významů utvořeného slova. Existující sémantické klasifikace konverze mezi slovesy a substantivy v angličtině a češtině jsou odlišné a jednotlivé kategorie v jednom jazyce nelze jednoduše promítnout na kategorie v jazyce druhém.

Speciální pozornost je věnována kognitivním přístupům, které konverzi pojímají jako druh metonymie (Kövecses & Radden, 1998; Dirven, 1999; Buljan, 2004; Schönfeld, 2005; Martsa, 2013). V těchto popisech je vztah mezi slovesem a substantivem v konverzní dvojici chápán jako vztah mezi koncepty v rámci jednoho konceptuálního rámce / domény / idealizovaného kognitivního modelu / schématu, konkrétně jako vztah mezi událostí a jejím participantem. Například sémantický vztah v konverzní dvojici *ski*.n ‘lyže’ – *ski*.v ‘lyžovat’ lze popsat jako metonymii NÁSTROJ ZA AKCI (*INSTRUMENT FOR ACTION*). Různí autoři postulují různé typy událostí a participantů.

Naše analýza sémantických vztahů mezi slovesem a substantivem v konverzních párech vychází právě z těchto kognitivních popisů. Tyto vztahy klasifikujeme jako vztahy mezi kognitivním schématem události a jednou z jeho složek nebo celým rekonceptualizovaným schématem. Používáme soubor kognitivních schémat popsaný v *Cognitive English Grammar*

(Radden & Dirven, 2007), tedy schéma vyskytnutí se[39] (*occurrence schema*) – stav nebo proces, který se děje samovolně, bez úmyslného jednání agenta; schéma umístění (*location schema*) – stav, kdy se něco nachází v nějaké pozici / na nějakém místě; schéma samovolného pohybu (*motion schema*) – samovolný pohyb nezpůsobený agentem; schéma vlastnictví (*possession schema*) – stav, kdy je něco někým vlastněno; schéma emoce (*emotion schema*) – situace, kdy někdo prožívá emoci; schéma percepce/kognice (*perception/cognition schema*) – situace, kdy někdo něco smyslově vnímá nebo mentálně zpracovává; schéma akce (*action schema*) – akce, při které agens úmyslně koná; schéma vlastního pohybu (*self-motion schema*) – úmyslný pohyb agenta; schéma způsobeného pohybu (*caused-motion schema*) – akce, při které agens něčím úmyslně pohybuje; a schéma transferu (*transfer schema*) – akce, při které agens něco předává recipientovi. Sloveso v konverzním páru vyjadřuje jedno z těchto schémat a substantivum jednu z jeho složek – např. *waitress*.n ‘servírka’ a *brigádník* vyjadřují AGENS (*AGENT*) ve schématu akce (*action schema*), které je vyjádřeno slovesy *waitress*.v ‘pracovat jako servírka’ a *brigádničit*, *bench*.n ‘lavička’ a *láhev* vyjadřují CÍL (*GOAL*) ve schématu způsobeného pohybu (*caused-motion schema*), které je vyjádřeno slovesy *bench*.v ‘posadit (někoho) na lavičku’, *lahvovat* atd. Případy, kde substantivum vyjadřuje celé schéma rekonceptualizované jako substanci, popisujeme jako vztah mezi schématem a jeho instancí (*INSTANCE OF ACTION*, *INSTANCE OF PROCESS*).

Hlavním cílem analýzy bylo prozkoumat, do jaké míry čeština a angličtina využívá těchto obecných významů při tvoření nových pojmenování událostí a jejich složek pomocí konverze. Analýzu jsme provedli na vzorku 300 konverzních párů v každém jazyce. Anglický vzorek byl extrahován z *British National Corpus*, český vzorek byl extrahován z korpusu *SYN2015* pomocí nástroje *Morfio*. Výsledný vzorek jsme sémanticky anotovali pomocí sady kognitivních schémat událostí a jejich složek, jak je uvádí *Cognitive English Grammar*. Významy sloves a substantiv v konverzních dvojicích jsme určovali pomocí slovníkových definic. Pro angličtinu byl využit *Oxford English Dictionary*, pro češtinu *Slovník spisovného jazyka českého*, *Slovník spisovné češtiny* a *Nový akademický slovník cizích slov*. Z důvodu polysémie často existuje mezi slovesem a substantivem více různých sémantických vztahů (např. *nájezd* pojmenovává jak instanci akce najíždění, tak fyzickou dráhu, po které se najíždí). Abychom toto v klasifikaci zachytili, v případech, kdy různé významy slov korespondovaly s různými schématy nebo

[39] Překlady v tomto odstavci jsou vlastní překlady autora.

jejich různými složkami, jsme u dvojice vyznačili více vztahů. To nám umožnilo analyzovat a porovnat vzorce polysémie v anglickém a českém vzorku.

Na anotovaných vzorcích jsme analyzovali, jak často substantivum v anglických a českých konverzních párech vyjadřuje kterou složku kognitivních schémat. V obou jazycích byla nejčastější kategorie INSTANCE AKCE (*INSTANCE OF ACTION*) a druhá nejčastější kategorie VÝSLEDKU (*RESULT*). Data ovšem ukázala také výrazné rozdíly mezi angličtinou a češtinou – v českém vzorku substantiva vyjadřovala PATIENS/POHYBUJÍCÍ SE OBJEKT (*THEME*), NÁSTROJ (*INSTRUMENT*), CÍL (*GOAL*) a PROSTŘEDEK (*MEANS*) méně často než v angličtině, a naopak častěji než v angličtině vyjadřovala AGENS (*AGENT*). Součástí analýzy bylo také srovnání vzorců polysémie, tedy vzorců různých sémantických kategorií, které existují společně v jednom konverzním páru. Zde se projevil výrazný rozdíl mezi oběma jazyky: v anglickém vzorku vyjadřovala téměř polovina všech konverzních dvojic více než jednu významovou kategorii, kdežto v českém vzorku pouze asi jedna šestina. V angličtině jsme také pozorovali více různých vzorců polysémie než v češtině, kde jediným produktivním vzorcem byla kombinace INSTANCE AKCE (*INSTANCE OF ACTION*) a VÝSLEDKU (*RESULT*).

V této práci jsme se pokusili o mezijazykové srovnání konverze jako procesu tvoření slov bez využití derivačních afixů, které se projevuje různě v typologicky odlišných jazycích. Sémantická klasifikace konverze mezi slovesy a substantivy založená na obecných kognitivních kategoriích, kterou jsme představili v této práci, se ukázala jako aplikovatelná na korpusová data a vhodná pro mezijazykové srovnání sémantických vztahů mezi slovesy a substantivy v konverzních párech. Výsledky ukazují některé podobnosti mezi oběma jazyky, ale také některé nápadné odlišnosti. Obzvláště vzorce více různých sémantických vztahů mezi slovesem a substantivem se jeví jako výrazně rozmanitější a frekventovanější v angličtině než v češtině. Výsledky analýzy by bylo v budoucnu zajímavé prozkoumat i v širším kontextu slovotvorného systému obou jazyků, neboť kompetice mezi konverzí a jinými typy slovotvorných procesů by mohla dále osvětlit nalezené rozdíly mezi oběma jazyky.