The role of metonymy in Czech word-formation*

LAURA A. JANDA

ABSTRACT: This article explores the role of metonymic semantic relationships in the derivation of words via suffixation in Czech. Most scholarly work on metonymy has focused on the use of one word to substitute for another word, as when we say *redhead* to refer to a whole person. A similar semantic relationship is present when we form a word like *břicháč* 'person with a (big) belly' from the noun *břicho* 'belly'. However, scholarly work on word-formation has not explored these metonymic semantic relationships. This study analyzes a database of 562 types of suffixal formations in Czech, where each type represents a unique combination of metonymic relationship, word-class, and suffix. This analysis not only demonstrates parallels between substitutional and word-formational metonymy, but shows that the metonymic relationships in word-formation are more diverse than in substitution. Asymmetries in these relationships are also explored, showing for example that actions are generally more salient than the participants and the setting, and that parts are more salient than wholes. The design of this study can be extended to analyze the word-formation systems of other languages and thus facilitate cross-linguistic comparisons.

Key words: metonymy, word-formation, suffixation, Czech

1 Introduction

The purpose of this article is to explore possible comparisons between substitutional metonymy and metonymy in word-formation. Substitutional metonymy is present when a word (a VEHICLE) is used to refer to something other than its usual referent (a TARGET). For example, if I say *I need to hire a good head for this project*, the word *head* is the VEHICLE that substitutes for a reference to an entire person (the TARGET). The VEHICLE FOR TARGET model has become the standard for classification of metonymy in cognitive linguistics (cf. Lakoff 1987, Kövecses & Radden 1998, Radden & Kövecses 1999, Panther & Thornburg 1999). The above example is classified as PART FOR WHOLE. However, there are many other metonymic relationships that can be identified. The sentence *The milk tipped over* illustrates a CONTAINED FOR CONTAINER substitutional metonymy, since it is actually the container (a glass or a carton) that tipped over, not the milk itself. Czech word-formation yields parallels to the substitutional metonymies described here. For example, *břicháč* 'person with a (big) belly' uses *břicho* 'belly' to refer to a person in a PART FOR WHOLE metonymy and *květináč* 'flower-pot' uses *květina* 'flowering plant' to refer to the pot in a CONTAINED FOR CONTAINER metonymy.

Nearly all studies of metonymy thus far have focused on substitutional metonymy. There has been no previous study of the role of metonymy in word-formation as a systematic phenomenon. The most comprehensive inventory of substitutional metonymy to date is presented by Peirsman & Geeraerts (2006; henceforth "P&G"). In order to facilitate a meaningful comparison between substitutional and word-formational meto-

nymy, I have designed a classification system that is closely parallel to the P&G system. The main findings are that metonymy plays a major role in Czech word-formation, and that metonymy is actually more diverse in this system than in use for substitution.

This article commences with a brief survey of relevant previous scholarship in section 2. Section 3 presents a database of Czech word-formational metonymy signaled by suffixation. This section describes the limitations of the database and its size and structure, which is compared with the known inventory of substitutional metonymy. Section 3 additionally addresses the issues of specificity and directionality of metonymy, with the finding that most suffixes are non-specific and most relationships are asymmetrical. The suffix -*áč* as we see in the above examples signals both PART FOR WHOLE and CONTAINED FOR CONTAINER, which shows us that a given suffix may signal various metonymic relationships. Whereas PART FOR WHOLE as in *břicháč* 'person with a (big) belly' is fairly common, WHOLE FOR PART such as *hrabiště* 'rake-handle' related to *hrábě* 'rake' is more rare; this imbalance indicates an asymmetry in the use of metonymy in word-formation. Section 4 contains conclusions.

2 Relevant previous scholarship

Linguistic theory has often ignored the role of metaphor and metonymy in language, relegating them to the status of literary devices. In the past few decades, cognitive linguistics has taken important steps to rectify this situation. As a result, metonymy and metaphor have been recognized as motivating forces in the structure of language. While word-formation has not been ignored, the connection to metonymy has not been made in a systematic way. Given the abundance of material, it is impossible to survey all relevant works on the topics of metonymy and word-formation. The purpose of this section is to situate the present study theoretically, though it is by necessity somewhat schematic, focusing only on major works.

2.1 *Previous studies of metonymy*

There is a debate in contemporary cognitive linguistics over whether to describe metonymy as a shift of meaning that occurs within a single domain (Barcelona 2002, Croft 1993, Kövecses 2002, Kövecses & Radden 1998, Langacker 1993 & 2009, Panther & Thornburg 1999) or as a contiguity relationship (Jakobson [1956] 1980, Peirsman & Geeraerts 2006, Seto 1999). Though this debate is important, this question will not be addressed in this article since it does not impact the results. We will adopt the definition in (1), which does not require us to take sides in this debate:

(1) Metonymy is present when one item (a VEHICLE) is used to access another item (a TARGET).

Thus metonymy is distinct from metaphor which involves a mapping of structure from a source domain to a target domain (Lakoff & Johnson 1980, Lakoff 1987).

Langacker argues that metonymy is prevalent in language "because our reference-point ability is fundamental and ubiquitous" (1993: 30) and that language is inherent-

ly metonymic in structure (2009: 45–46; cf. similar claims in Radden 2005). However, only a few works on metonymy in word-formation have been produced, and those that do exist are limited to a single affix or a small group of affixes (Koch 1999, Basilio 2006, Panther & Thornburg 2002, Radden 2005) or to examples of conversion (Dirven 1999, Warren 1999) or compounding (Benczes 2005, Langacker 2009). These works give growing, but spotty evidence that metonymy plays a role in word-formation. It is also important to mention that most of these works are based on English, where the word-formation system has been compromised by massive borrowing. A systematic study of a language like Czech with rich word-formation is missing, and this article aims to address that gap. The P&G inventory presents a set of classificatory terms for VEHICLES and TARGETS. These terms and how they are used in this article are discussed in more detail in section 3.

2.2 *Previous studies of word-formation*

Dokulil (1962) details his onomasiological model of word-formation, in which he asserts (1962: 14) that word-formation deserves greater appreciation in linguistics since, at least in the case of Czech, virtually the entire lexicon is composed of derivational families of words. Dokulil's model is highly compatible with a metonymic interpretation of word-formation, since he presents a set of terms used to define the relationships between the "mark" (= VEHICLE) and the "base" (= TARGET), and he analyzes derived words in terms of "onomasiological types" (= classifications), which contain a semantic relationship, a word-class relationship, and an affix. Dokulil's set of terms is relatively small and abstract, consisting of only four items: "substance" (the aggregate of entities, collectives, materials and participants marked by substantives), "quality" (roughly the equivalent of characteristics marked by adjectives), "action" (covering all types of verbs), and "circumstance" (ranging over adverbial dimensions of time, space, and manner). Dokulil's system thus conflates the semantic and the word-class aspects of word-formation, and his terms are too non-specific to facilitate comparison with the P&G system. Dokulil (1962: 32–33) claims that all relationships are bi-directional, offering a cube to illustrate, where the eight corners correspond to his four terms, each of which serves as both "mark" (= VEHICLE) on one side of the cube and as "base" (= TARGET) on another side. However, the more detailed classification system used here reveals many asymmetrical types. Dokulil does recognize the role of metonymy, but only in its substitutional use, and states that such semantic relationships do not build new words (1962: 20; cf. Štekauer 2005: 210). In his grammar, Dokulil (Dokulil et al. 1986) describes Czech word-formation in a more traditional fashion, listing formation types according to the word-classes involved, parallel to other reference grammars such as Švedova et al. 1980, instead of applying his onomasiological model in a systematic fashion.

Mel'čuk's (1996) "Lexical Functions" is an extensive mathematical model designed to describe "all types of genuine lexical relations that obtain between LUs [Lexical Units] of any language". Mel'čuk does not name word-formation directly, but it is

among the relevant phenomena (cf. LFs 8–23). Additionally the sub-phenomenon of "meronymy" (part-whole relationships) is listed for five lexical functions (cf. Wanner 1996: 6). In many ways this model is also compatible with the model proposed in the present article.

Another relevant theoretical model of word-formation was proposed by Lipka (1990; cited from Kastovsky 2005), who takes an eclectic approach, combining structuralist, generative, and lexical field theory to model the semantic structures of words. The focus in his work is on conversion (zero derivation) and he does recognize metaphor and metonymy as systematic motives for conversion. Lipka's model does not, however, extend to affixal word-formation, and allied approaches (such as that of Marchand) are largely restricted to compounding (cf. Kastovsky 2005: 112–115).

This article takes Czech suffixal word-formation as a case study and attempts to build a classification system that facilitates comparison with substitutional metonymy as well as extension to other languages to facilitate cross-linguistic comparison.

3 Database of Czech word-formational metonymy signaled by suffixation

Based on Dokulil et al. 1986 (cf. also Janda & Townsend 2000, Townsend & Komar 2000), a database of metonymy in Czech word-formation was constructed. As with all such projects, it was necessary to limit the study in various ways and to make many decisions concerning the classification system, which is directly parallel to that of P&G. This database facilitates comparison of substitutional and word-formation metonymy, and further reveals the suffix's role in the system and the directionality of metonymy. It is important to note that many examples of word-formation can be interpreted in more than one way. For example, the presence of the -l suffix in nouns and adjectives in -l, -el(ý), -il(ý) derived from verbs can be alternatively interpreted as a grammatical instead of a derivational suffix. In order to provide a consistent analysis, the database was designed to follow Dokulil's system as closely as possible. This means that some speakers of Czech may disagree with some of the designations. Overall such disagreements would not have a large impact on the outcome.

3.1 *Limitations of the database*

Only suffixal word-formation is examined in this study. Prefixes have been excluded in order to avoid the set of issues surrounding Slavic aspect, which would have greatly complicated the analysis, although there is evidence of metonymy in this part of the word-formation system as well (cf. Janda 2008 and Nesset 2009). In order to consistently avoid aspectual word-formation, the use of suffixes to mark perfective (-*nout*) or imperfective (-*ovat*) is also excluded, though these suffixes are included when used in other roles, such as *mládnout* 'grow younger', a CHARACTERISTIC FOR CHANGE STATE metonymy, and *učitelovat* 'work as a teacher', an AGENT FOR ACTION metonymy. Isolated examples (pertaining to only a single lexical item) and dialectisms are not included. In terms of register, Dokulil et al. 1986 serves as the model, so it is

primarily literary Czech that is represented, with the same degree of spoken Czech as found in the *Mluvnice češtiny*.

Hypocoristics, comparative adjectives and adverbs, and use of suffixes to change only paradigm type are excluded on the grounds that they do not signal metonymy. Dokulil (1962: 46–48) argues that hypocoristics constitute a secondary, "modificational" phenomenon that is peripheral to word-formation (cf. Townsend 1975: 196 for a similar evaluation for Russian hypocoristics). The use of suffixes to change only paradigm type involves the formation of deverbal nouns with no specialized meaning, such as *zazvonění* 'ringing' from *zazvonit* 'ring', and the formation of feminine equivalents for nouns that refer to males, as in *profesorka* 'female professor' from *profesor* 'professor'. There is some homomorphy between metonymic and non-metonymic uses of suffixes. For example, *-ka* has many metonymic uses, as in the ACTION FOR PRODUCT example *sbírka* 'collection' from *sbírat* 'collect', but is also used in formation of feminine equivalents and in diminutives such as *knížka* 'little book' from *kniha* 'book'. The same suffix is additionally found in univerbations like *trojkolka* 'tricycle', but this type of formation is likewise beyond the scope of this study since it involves complex (rather than simple) metonymical VEHICLES.

Because conversion types such as *lom* 'quarry' from *lomit* 'break' (ACTION FOR LOCATION) and *koupě* 'purchase' from *koupit* 'buy' (ACTION FOR ABSTRACTION) are also included in Dokulil's (Dokulil et al. 1986) survey of Czech word-formation, this type is likewise represented in the database. It is possible to argue that conversion involves "zero suffixation" (cf. Townsend 1975), but I do not take a stance on whether zero morphemes exist or not.

Suffixal allomorphy poses another challenge, since many suffixes have various forms due to historical sound changes or extensions. Here again I follow Dokulil's lead. Where variants clearly behave as allomorphs, as in the short vs. long versions of *-ař/-ář* (cf. Dokulil et al. 1986: 242), I recognize only one suffix. Where extensions create arguably different (though etymologically related) suffixes, I recognize them as different, as in the case of *-ice* vs. *-nice* (cf. Dokulil et al. 1986: 275).

The database is strictly a collection of classification types, where each classification type consists of a unique combination of three items: a) a metonymy classification, b) a word-class classification, and c) a suffix. Each entry is additionally supplied with an illustrative example. The database does not take into account type or token frequency. In other words, the database does not tell us how many words are associated with a given classification type (type frequency), nor what the frequency of those words is (token frequency). Note that type and token frequency are likewise absent from the P&G inventory. While type and token frequency information would be relevant and useful, it goes beyond the scope of the current study. Note further that whereas in some examples it would make sense to distinguish between a suffix and a desinence (for example *-nice* could be segmented as *-nic-e*), the complex morphophonemics of Czech make this segmentation problematic for many examples, so no segmentation is attempted here.

A further limitation to the database is posed by ambiguous data. For example, *beranina* from *beran* 'ram' can denote either 'mutton' (thus ENTITY FOR MATERIAL) or 'the

smell of ram' (thus ENTITY FOR ABSTRACTION). I decided to recognize only one meto-
nymy classification per entry, but to include enough entries to cover all possibilities.
In this case I thus listed only the first meaning for *beranina*, but added *rybina* 'fishy
smell' so that the second metonymy classification is also represented. Another type of
ambiguity is posed by words that have multiple possible word-formational relation-
ships. For example, *kliďas* 'calm person' is arguably related to both *klid* 'peace' and
klidný 'peaceful'. The solution here is similar in that I recognize one classification type
involving a noun as vehicle, *kliďas* 'calm person' from *klid* 'peace' (thus ABSTRACTION
FOR ENTITY), and have another classification type in order to capture the relationship
to adjectives, namely *kruťas* 'cruel person' from *krutý* 'cruel' (thus CHARACTERISTIC
FOR ENTITY).

3.2 *Size and structure of the database*

The database contains 562 classification types, and these are constituted of various
combinations of metonymy classifications, word-class classifications, and suffixes. In
total, 106 different metonymy classifications are identified, and these involve 23 dif-
ferent word-class classifications, and 207 suffixes.

The goal was to create a system that is maximally comparable with the P&G sys-
tem. However, as I show in the next subsection, it turns out that word-formation expres-
ses a larger range of metonymy relationships, so some elaborations are required. For
the most part, this involves identifying subtypes among the terms for VEHICLES and
TARGETS. Table 1 lists the terms that are used in this system.

Table 1: Classificatory terms for VEHICLES and TARGETS

Relating to **Actions**:	ACTION, STATE, CHANGE STATE, EVENT, MANNER, TIME
Relating to **Participants**:	AGENT, PRODUCT, PATIENT, INSTRUMENT
Relating to **Entities**:	ENTITY, ABSTRACTION, CHARACTERISTIC, GROUP, LEADER, MATERIAL, QUANTITY
Relating to **PART FOR WHOLE**:	PART, WHOLE, CONTAINED, CONTAINER, LOCATED, LOCATION, POSSESSED, POSSESSOR

The following terms are adopted directly from P&G: PART, WHOLE, CONTAINER, CON-
TAINED, LOCATION, LOCATED, MATERIAL, TIME, STATE, MANNER, POSSESSOR, POSSESSED,
and CHARACTERISTIC. P&G's term ACTION/EVENT/PROCESS is subdivided into EVENT,
CHANGE STATE, and ACTION. P&G's PARTICIPANT is subdivided into AGENT, PRODUCT,
PATIENT, and INSTRUMENT. Entity is subdivided into ENTITY, ABSTRACTION, and LEADER.
COLLECTION is re-named GROUP. The only new term that has been introduced is QUAN-
TITY, as in *patnáctka* 'number 15 (bus, etc.)' from *patnáct* '15' (QUANTITY FOR ENTITY).
Table 2 illustrates the eleven most popular metonymy classifications attested in this
database of suffixal word-formation (ten yields a tie, which is why eleven are listed),
and thus also illustrates many of the terms used to classify VEHICLES and TARGETS. Other
terms are illustrated elsewhere in the article.

Table 2: Top 11 metonymy classifications in Czech word-formation

metonymy classification		illustrative example		# suffixes
VEHICLE	TARGET	VEHICLE	TARGET	
ACTION	CHARACTERISTIC	*škodit* 'harm'	*škodlivý* 'harmful'	31
ACTION	AGENT	*žrát* 'devour'	*žrout* 'glutton'	26
ABSTRACTION	CHARACTERISTIC	*klid* 'peace'	*klidný* 'peaceful'	24
CHARACTERISTIC	ENTITY	*mladý* 'young'	*mladík* 'young person'	23
ACTION	INSTRUMENT	*sušit* 'dry'	*sušička* 'dryer'	23
ENTITY	CHARACTERISTIC	*Kafka*	*kafkovský* 'Kafkaesque'	20
ACTION	ABSTRACTION	*žebrat* 'beg'	*žebrota* 'begging'	20
ACTION	EVENT	*zkoušet* 'try'	*zkouška* 'test'	16
ACTION	LOCATION	*parkovat* 'park'	*parkoviště* 'parking lot'	16
ACTION	PRODUCT	*sbírat* 'collect'	*sbírka* 'collection'	15
CHARACTERISTIC	ABSTRACTION	*chudý* 'poor'	*chudoba* 'poverty'	15

Table 2 shows the metonymy classifications that are associated with the highest numbers of suffixes. For example, ACTION FOR CHARACTERISTIC is signaled by 31 suffixes, while ACTION FOR AGENT is signaled by 26 suffixes. Though this is just the tip of the iceberg (11 out of 106 metonymy classifications), the eleven metonymy classifications in Table 2 reveal some strong patterns. Note that seven of the eleven top metonymy classifications use ACTION as a VEHICLE. Overall, ACTION is the most widespread VEHICLE, involved in a total of twelve metonymy classifications in Czech word-formation. This suggests that (verbal) ACTIONS are highly salient in the word-formation system, since they are used to access many other TARGETS. Three terms serve as VEHICLES for ten metonymy classifications each, CHARACTERISTIC, ENTITY, and LOCATION, followed by ABSTRACTION and QUANTITY, with nine classifications each. These patterns yield insights into what items are most salient in the mental address system of metonymic word-formation. Note that association with multiple suffixes is the norm in this system. Seventy of the 106 metonymy classifications are signaled by two or more suffixes. More data and discussion of the specificity of suffixes follows in section 3.4.

Some of the metonymy classifications in the database are closely related to each other, and in the case of individual examples, they may be nodes in a continuum rather than discrete classifications. Both a CONTAINER and a GROUP can also be thought of as WHOLES that encompass their contents or group members, motivating a link to PART FOR WHOLE. WHOLES have PARTS, which are like inalienable POSSESSIONS (cf. for example body parts), and this motivates a link to alienable POSSESSIONS, thus connecting POSSESSED FOR POSSESSOR to PART FOR WHOLE. PARTS and WHOLES also share a LOCATION, motivating a further link. Furthermore, a MATERIAL from which an ENTITY is made parallels the PART FOR WHOLE relationship to some extent (with the difference that the MATERIAL is the single main ingredient, rather than just a PART). Figure 1 outlines the relationships between these classifications.

Individual examples are sometimes hard to classify. In the database *vinice* 'vineyard' (derived from *víno* 'grapes') is classified as CONTAINED FOR CONTAINER, but it might be

possible to argue that it is really LOCATED FOR LOCATION. Since a grove is a group of trees, *březina* 'birch grove' (derived from *bříza* 'birch') is classed as ENTITY FOR GROUP but again we see a similarity to LOCATED FOR LOCATION. As regards *světluška* 'firefly': *světlo* 'light' here is classed as a PART of its body, but one could also view it as something POSSESSED by the insect. Or alternatively it could be an INSTRUMENT that the insect uses.
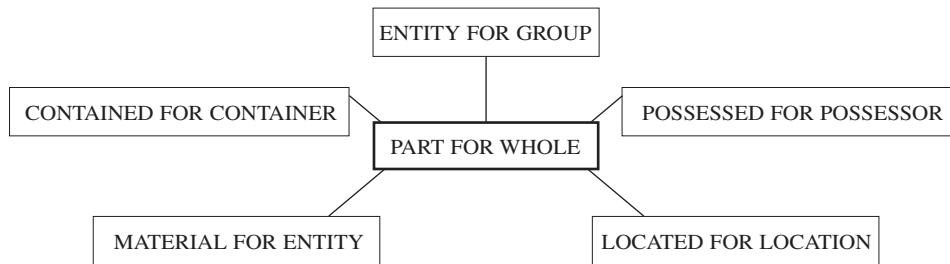

Figure 1: Relation of PART FOR WHOLE to other metonymy classifications

Types where the TARGET might be identified as an INSTRUMENT are likewise difficult to classify, since INSTRUMENTS can be hard to distinguish from several other terms. Is *klavír* 'piano' the PATIENT of what the *klavírista* 'pianist' does or an INSTRUMENT? This database classes *klavírista* 'pianist' as INSTRUMENT FOR AGENT since the goal of the pianist is to make music. There is thus a subtle distinction between the metonymies that motivate *klavírista* 'pianist' and *zubař* 'dentist' (from *zub* 'tooth'), since the latter is classed as PATIENT FOR AGENT. In this database *led* 'ice' is classed as that which is CONTAINED in a *lednice* 'refrigerator', but historically one could argue that in pre-modern times ice was the INSTRUMENT that kept a box cold (cf. English *ice-box*, still used as a synonym for *refrigerator*). In the database, *pračka* 'washing machine' (derived from *prát* 'launder') is classified as ACTION FOR INSTRUMENT, but if I only have to push a button in order to launder clothes, is the machine actually something closer to an AGENT? *Pec* 'oven' (derived from *péci* 'bake') is classed an example of ACTION FOR INSTRUMENT. But perhaps ACTION FOR LOCATION is a possible alternative if the oven is very big?

Overall, it is worth noting that the metonymy classifications found in the Czech database suggest three somewhat overlapping frames. The first involves spatial contiguity connecting PART/WHOLE and its nearest neighbors, as described above. The second frame is connected to the temporal domain of an ACTION which might have one or more arguments such as an AGENT, a PATIENT, a PRODUCT, an INSTRUMENT, a LOCATION, and a TIME when it takes place. The relationship of AGENTS to PRODUCTS and INSTRUMENTS can overlap with portions of the PART/WHOLE frame, as can any classification that involves a LOCATION. The third major frame is abstract and involves ENTITIES and their CHARACTERISTICS, thus overlapping with the other two frames via POSSESSOR and INSTRUMENT and possibly also LOCATION. These three frames correspond to the three types of metonymy, namely spatial, temporal and abstract, recognized by Seto (1999).

3.3 *Substitutional metonymy vs. word-formation metonymy*

The presence of word-formation parallels to substitutional metonymy such as *břicháč* 'person with a (big) belly' and *květináč* 'flower-pot' cited in 1.0 indicate that there is some overlap between substitutional and word-formation use of metonymy. However, an unexpected finding of this study is that the word-formation use is considerably more diverse than the substitutional use. Table 3 gives some overall statistics, and illustrative examples are found in Table 4.

Table 3: Comparison of substitutional (P&G) metonymy with Czech word-formational metonymy

Metonymy classifications found only in substitution = **27**	Metonymy classifications found in both substitution and Czech word-formation = **61**	Metonymy classifications found only in Czech word-formation = **45**
Metonymy classifications found in substitution 27 + 61 = **88**		Metonymy classifications found in Czech word-formation 61 + 45 = **106**

One goal of the database design was to maximize comparability across the domains of substitution and word-formation. Thanks to this design it is possible to align and compare the extent of metonymy in the two domains. Whereas P&G found a total of 88 metonymy classifications for substitution according to this unified system, there are 106 metonymy classifications found in Czech word-formation. Sixty-one of these classifications are shared across the two domains, twenty-seven are found only in substitution, and forty-five are found only in word-formation. Since only one term was added for the word-formation classification (QUANTITY), this diversity is primarily attributable to greater flexibility in the combinations found in word-formation. Table 4 cites examples of substitutional metonymy from various European languages found in P&G alongside examples from the Czech database of word-formation.

Table 4: Comparison of metonymy classifications across substitution and word-formation

Metonymy classifications found only in substitution (sample out of 27 items):
  – ACTION FOR TIME: *la saison* (< 'act of sowing')
  – AGENT FOR PRODUCT: *(I'm reading) Shakespeare*
  – TIME FOR ENTITY: *the sixties*
  – CONSEQUENT FOR ANTECEDENT: *phobos* ('fear' < 'flight')
  – SUBEVENT FOR COMPLEX EVENT: *mother is cooking potatoes* (involves also washing, peeling, etc.)
  – CAUSE FOR EFFECT: *unlock the prisons* (meaning 'set the prisoners free')
  – POTENTIAL FOR ACTUAL: *Can you see him?* (meaning 'Do you see him?')
  – HYPONYM FOR HYPERNYM: *Kodak* (meaning 'camera')
  – HYPERNYM FOR HYPONYM: *the pill* (meaning 'contraceptive pill')

Metonymy classifications shared by substitution and Czech word-formation (sample out of 61 items):
  – ACTION FOR AGENT: *a snitch*; *hrabal* 'greedy person' (< *hrabat* 'rake')
  – ACTION FOR INSTRUMENT: *Andenken* ('keepsake' < 'act of remembering'); *odměrka* 'measuring-cup' (< *odměřit* 'measure')

- ACTION FOR LOCATION: *Gang* ('corridor' < 'act of walking'); *parkoviště* 'parking-lot' (< *parkovat* 'park')
- INSTRUMENT FOR ACTION: *to ski*; *bičovat* 'beat with a whip' (< *bič* 'whip')
- ACTION FOR PATIENT: *achat* ('purchase' < 'act of buying'); *lízátko* 'lollipop' (< *lízat* 'lick')
- AGENT FOR ACTION: *to butcher*; *pytlačit* 'do poaching' (< *pytlák* 'poacher')
- CHARACTERISTIC FOR ENTITY: *a beauty*; *naháč* 'naked person' (< *nahý* 'naked')
- CONTAINER FOR CONTAINED: *(to drink) a glass*; *kapesné* 'pocket-money' (< *kapsa* 'pocket')

Metonymy classifications found only in Czech word-formation (sample out of 45 items):
- ABSTRACTION FOR ACTION: *toužit* 'long for' (< *touha* 'desire')
- ABSTRACTION FOR MANNER: *honem* 'quickly' (< *hon* 'chase')
- ACTION FOR CHARACTERISTIC: *váhavý* 'hesitant' (< *váhat* 'hesitate')
- ACTION FOR EVENT: *zabijačka* 'pig-slaughtering' (< *zabíjet* 'kill')
- CHARACTERISTIC FOR ACTION: *chladit* 'cool[verb]' (< *chladný* 'cool[adj]')
- CHARACTERISTIC FOR CHANGE STATE: *mládnout* 'grow younger' (< *mladý* 'young')
- EVENT FOR CHARACTERISTIC: *válečný* 'war[adj]' (< *válka* 'war')
- LOCATION FOR CHARACTERISTIC: *městský* 'municipal' (< *město* 'city')
- PATIENT FOR ACTION: *věznit* 'imprison' (< *vězeň* 'prisoner')
- TIME FOR CHARACTERISTIC: *včerejší* 'yesterday's' (< *včera* 'yesterday')

For most of the metonymies that appear to be specific to substitution, it is hard to imagine how they might be implemented in word-formation. In substitution, HYPONYM FOR HYPERNYM and HYPERNYM FOR HYPONYM usually involve brand names that become generic terms (like *Kodak* or *Xerox*) or generic terms that become hypostasized to have a single specific meaning (like English *the pill* to stand specifically for a contraceptive pill). Czech word-formation does not seem to make use of such hierarchical semantic relations. Note that AGENT FOR PRODUCT, as in *čtu Shakespeara* 'I'm reading Shakespeare' is bidirectional in substitution, where we also find examples of PRODUCT FOR AGENT such as French *coucou* 'cuckoo' (Peirsman and Geeraerts 2006: 298), but only the latter is found in Czech word-formation, as in *hrnčíř* 'potter' (< *hrnec* 'pot').

3.4 *Specificity of suffixes in terms of metonymy*

A key question in examining the role of metonymy in word-formation is to what extent the suffix specifies the metonymy classification. Indeed, if each suffix were to uniquely specify a single classification, one would wonder whether we are dealing with metonymy at all, since the relationship would be fully determined by the word-formational elements. There are two ways to measure the specificity of the suffixes, and both show that there is no one-to-one mapping between metonymy classifications and suffixes. One measure involves looking at metonymy classifications and seeing how many suffixes they are associated with, and, as we see in Table 2, there are eleven metonymy classifications that are signaled by fifteen or more different suffixes. Thus we cannot predict what suffix will be present based upon the metonymic relationship. The other measure goes in the reverse direction, asking how many metonymy classifications are found per suffix. Figure 2 visualizes this second measure, with the number of metonymy classifications on the x-axis and the number of suffixes with x classifications on the y-axis.
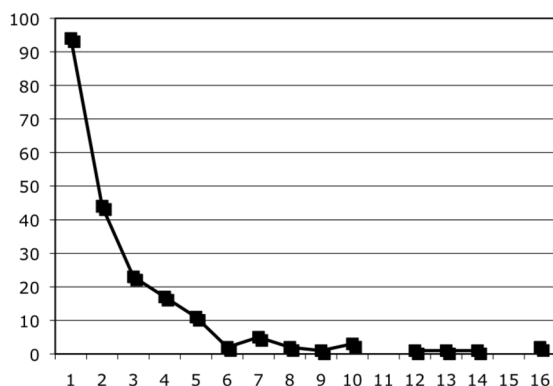
Figure 2: Specificity of suffixes for metonymy classifications

Figure 2 shows a classic "J" distribution in which a fairly large number of suffixes (ninety-four) signal only one metonymy classification, but the rest are less specific, ranging from two metonymy classifications signaled by each of forty-four suffixes, to sixteen metonymy classifications signaled by each of two suffixes, namely *-ina* and *-ník*. The mean number of metonymy classifications per suffix is 2.6, which indicates a large amount of indeterminacy in the system. Given this distribution, it appears that the suffix often does little more than to signal that a metonymic relationship is present. This is consistent with Langacker's (2009: 45–46) claim that metonymy is ubiquitous in language and that the canonical situation in language is indeterminacy. Table 5 presents the sixteen metonymic relationships signaled by Czech *-ník* as an extreme example of the degree of indeterminacy in word-formation metonymy.

Table 5: Czech *-ník* and its sixteen metonymy classifications

METONYMY CLASSIFICATION		illustrative example	
VEHICLE	TARGET	VEHICLE	TARGET
ABSTRACTION	ENTITY	*služba* 'service'	*služebník* 'servant'
ACTION	AGENT	*pracovat* 'work'	*pracovník* 'worker'
ACTION	INSTRUMENT	*narazit* 'collide with'	*nárazník* 'bumper'
ACTION	LOCATION	*chodit* 'walk'	*chodník* 'sidewalk'
CONTAINED	CONTAINER	*čaj* 'tea'	*čajník* 'teapot'
ENTITY	ENTITY	*střevíček* 'lady's shoe'	*střevíčník* 'lady-slipper (a flower)'
GROUP	ENTITY	*družstvo* 'collective'	*družstevník* 'collective farmer'
INSTRUMENT	AGENT	*soustruh* 'lathe'	*soustružník* 'lathe-worker'
LOCATED	LOCATION	*ryba* 'fish'	*rybník* 'fishpond'
LOCATION	AGENT	*knihovna* 'library'	*knihovník* 'librarian'
LOCATION	LOCATED	*skála* 'cliff'	*skalník* 'cotoneaster (grows on cliffs)'
MATERIAL	AGENT	*zlatý* 'gold'	*zlatník* 'goldsmith'
MATERIAL	ENTITY	*pára* 'steam'	*parník* 'steamboat'
PATIENT	AGENT	*papír* 'paper'	*papírník* 'seller of paper goods'
PRODUCT	AGENT	*kouzlo* 'magic'	*kouzelník* 'magician'
QUANTITY	ENTITY	*pět* 'five'	*pětník* '5 crown piece'

3.5 *Directionality of metonymy*

Some metonymy relationships are bi-directional in Czech word-formation, such as ACTION & PRODUCT, which yields both ACTION FOR PRODUCT in *sbírat* 'collect' > *sbírka* 'collection' and PRODUCT FOR ACTION in *kadeř* 'curl' > *kadeřit* 'make curls'. Other bi-directional metonymy relationships include ENTITY & CHARACTERISTIC and ABSTRACTION & CHARACTERISTIC (see examples in Table 2). However, the database also reveals strong asymmetries in the metonymy classifications of Czech word-formation. These asymmetries involve metonymy classifications that are either exclusively uni-directional or are strongly skewed in favor of only one direction. Some examples of uni-directional or strongly skewed relationships are listed in Table 6.

Table 6: Uni-directional and strongly skewed metonymy relationships

Uni-directional metonymy relationships			
METONYMY CLASSIFICATION		illustrative example	
VEHICLE	TARGET	VEHICLE	TARGET
PRODUCT	AGENT	*socha* 'sculpture'	*sochař* 'sculptor'
PATIENT	AGENT	*zub* 'tooth'	*zubař* 'dentist'
INSTRUMENT	AGENT	*soustruh* 'lathe'	*soustružník* 'lathe operator'
STATE	LOCATION	*vězet* 'be stuck'	*vězení* 'prison'
Strongly skewed metonymy relationships			
METONYMY CLASSIFICATION		illustrative example	
VEHICLE	TARGET	VEHICLE	TARGET
ACTION	AGENT	*žebrat* 'beg'	*žebrák* 'beggar'
ACTION	CHARACTERISTIC	*váhat* 'hesitate'	*váhavý* 'hesitant'
ACTION	INSTRUMENT	*létat* 'fly'	*letadlo* 'airplane'
ACTION	ABSTRACTION	*koupit* 'buy'	*koupě* 'purchase'
ACTION	EVENT	*zabíjet* 'slaughter'	*zabijačka* 'pig-slaughtering'
PART	WHOLE	*břicho* 'belly'	*břicháč* 'person with a belly'
CONTAINED	CONTAINER	*květina* 'flower'	*květináč* 'flower-pot'

The uni-directional and skewed relationships suggest that some items are more salient and thus more likely to serve as VEHICLES. As we saw in section 3.2, ACTION is particularly well-suited to this role. AGENTS, on the contrary, are more likely to be the TARGETS that are accessed via metonymy. Both PART FOR WHOLE and CONTAINED FOR CONTAINER indicate that we often use a component item as a VEHICLE to access a larger TARGET item.

4 Conclusions

This article breaks new ground by exploring systematic parallels between substitutional metonymy and metonymy signaled in word-formation on the material of Czech. Previous scholarly works on metonymy have focused nearly exclusively on substitutio-

nal metonymy, and previous works on word-formation mention metonymy only rarely. This is peculiar given that: a) substitutional and word-formation metonymy clearly belong to the same system, b) the majority of metonymy relationships expressed in each of the domains are shared, and c) the range of metonymy relationships expressed in word-formation is considerably more diverse than what is found in substitution. This study demonstrates that metonymy is not merely a device for substituting lexical items, but rather a prominent part of the word-formation system. The facts that a given metonymy relationship can be signaled by up to thirty-one suffixes and a single suffix can signal up to sixteen different metonymy relationships indicate a high degree of indeterminacy in the system. As a consequence, a suffix does not determine what metonymy relationship holds, but merely serves to signal that a metonymy relationship is present. Although a few metonymy relationships are balanced in terms of directionality, most are either unidirectional or strongly skewed in one direction. Such asymmetries point to trends in the mental address system of language and, from a larger perspective, the relative salience of concepts for human beings. For example, based on the sample of Czech word-formation, actions play a pivotal role in facilitating access to many other concepts, such as the participants and setting. Parts and contents are often more salient that the wholes and containers they are associated with. The design of the database for this study can furthermore be applied to the word-formation systems of other languages so that this line of research can be extended to cross-linguistic comparisons.

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RÉSUMÉ

Metonymie v české slovotvorbě

V tomto článku ukazuji, že metonymii nacházíme nejenom ve výrazech, v nichž jedno slovo nahrazuje jiné, ale také v odvozování slov. Výraz *na tu práci potřebujeme chytrou hlavu* je metonymický, protože slovo *hlava*, které popisuje část člověka, nahrazuje jiné slovo (jako *člověk* nebo *osoba*), které by popisovalo celého člověka. Samozřejmě nemůžeme zaměstnat jen hlavu, musíme přijmout celého člověka. Abychom poukázali na cíl, jímž je *celý člověk*, používáme jako nositele slovo *hlava*. Vztah mezi nositelem a cílem je v tomto případě ČÁST MÍSTO CELKU. Existují i jiné metonymické vztahy. Například když řeknu, že *se převrátilo mléko*, není to vlastně mléko, které se převrátilo, ale láhev nebo sklenice. Metonymický vztah v tomto příkladu je OBSAH MÍSTO NÁDOBY.

Metonymie provedená záměnou slov je tématem množství lingvistických studií, které dokazují, že metonymie tvoří mentální systém dostupnosti pojmů. Peirsman a Geeraerts (2006) shromáždili nejobsáhlejší inventář metonymických vztahů doložených při záměně slov. Paralelní vztahy ovšem nacházíme i v odvozování slov. Například když řeknu, že je někdo *břicháč*, popisuji celého člověka poukázáním pouze na jednu jeho část, *břicho*. Zde jde o vztah ČÁST MÍSTO CELKU. A odvozování slova *květináč* využije vztah OBSAH MÍSTO NÁDOBY tím, že odkazuje na nádobu pojmenováním jejího obsahu, totiž *květina*.

Ve vědecké literatuře o metonymii je jen málo zmínek o slovotvorbě a ve studiích věnovaných odvozování slov skoro úplně chybí rozbor metonymických vztahů. Tento článek je prvním pokusem o sjednocený přístup k metonymii a slovotvorbě. Dokulil (1962; Dokulil et al., 1986) sice nezmiňuje metonymii ve svém modelu slovotvorby, ale taková analýza není s jeho modelem v rozporu. Stejně jako Dokulil dělím typy slovotvorby podle tří faktorů: (1) vztah mezi příznakem (= nositelem) a bází (= cílem), (2) slovní druh a (3) přípona. Rozdíl je v tom, že Dokulil uznával jen čtyři termíny pro příznak a bázi, kdežto moje klasifikace je založena na klasifikaci Peirsmana a Geeraertse, která je daleko rozsáhlejší. Kromě toho tato klasifikace umožňuje srovnání mezi metonymií záměnou slov a metonymií ve slovotvorbě. Toto srovnání dokazuje nejen to, že tyto jevy jsou paralelní, ale i to, že metonymie ve slovotvorbě je ještě pestřejší než ta, která je provedena záměnou slov.

Jen některé metonymické vztahy, které byly nalezeny při záměně slov, nebyly nalezeny při tvoření slov, např. ČINITEL MÍSTO VÝROBKU: *čtu Shakespeara* (kde jméno spisovatele se užívá místo jeho knih). Většinu vztahů nacházíme v obou systémech, např. NÁDOBA MÍSTO OBSAHU: *vypít sklenici* (kde se jedná o obsah, který je vypit); *kapesné* (od *kapsa*). Dost velký počet metonymických vztahů byl nalezen pouze ve slovotvorbě, např. ABSTRAKCE MÍSTO DĚJE: *toužit* (od *touha*).

Vybudovala jsem databázi metonymických typů v české slovotvorbě. V databázi se nachází 562 typů roztříděných podle tří výše uvedených faktorů. V databázi lze zjistit různé tendence, jako například které metonymické vztahy se nejčastěji vyskytují v české slovotvorbě. V češtině je 31 přípon, které signalizují vztah DĚJ MÍSTO VLASTNOSTI typu *škodlivý* (odvozeno od *škodit*). Dále jsou to vztahy DĚJ MÍSTO ČINITELE (26 přípon; *žrout* od *žrát*), ABSTRAKCE MÍSTO VLASTNOSTI (24 přípon; *klidný* od *klid*) atd.

Článek probírá celou řadu otázek spojených s metonymií v české slovotvorbě: relace mezi příponami a vztahy, směr vztahů (vztahy jsou převážně dvousměrné, ale některé jsou jednosměrné), vztahy, které lze těžko rozlišovat.

Klasifikaci vybudovanou v tomto článku lze použít při rozboru dalších jazyků. Tímto způsobem by bylo možné zkoumat a srovnávat mentální systémy dostupnosti pojmů v různých jazycích.

HSL fakultet, Universitetet i Tromsø
N-9037 Tromsø, Norway
<laura.janda@uit.no>