<ET>Polysemy of Affixes: A Slavic Perspective

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<ABS>Polysemy is defined as a multiplicity of related meanings connected by a single linguistic form. Polysemy can be understood in relation to both homonymy and contextual variation. Homonymy presents unrelated inventories of meanings connected by a given form, while contextual variation describes meanings that can be attributed to the effects of context. Polysemy borders on both homonymy and contextual variation, and the boundaries between these three phenomena may be indistinct. Polysemy is recognized as a network of meanings structured via various kinds of association, such as metaphor and metonymy. This entry provides concrete examples of such semantic networks connected with affixes. The polysemy of affixes is illustrated on the basis of two systems of affixation: Russian aspectual prefixes and Czech derivational suffixes. Polysemy is the norm in both systems, and individual affixes are singled out for more detailed analysis. Each Russian prefix expresses a prototypical 'path' or trajectory in combination with motion verbs, and these meanings are variously extended when prefixes are combined with other verbs. Together the meanings form a radial category network. The meanings of Czech derivational suffixes are characterized by metonymy patterns such as ACTION FOR AGENT, and each suffix has a profile of metonymy patterns that are also related to one another. In addition to presenting these two case studies, I suggest possible future venues for research on the typological and empirical extent of the polysemy of affixes. The examination of entire systems of polysemous affixes can facilitate typological comparisons across languages. Corpus-based analyses of type and token frequencies of polysemous affixes and of the relative frequencies of their meanings can shed light on the empirical extent of the phenomenon and help to identify its most common patterns.

<KW>contextual variation; derivation; homonymy; metaphor; metonymy; prefixes; suffixes

<A>1 Introduction

<P>Given that the assigned title of this entry presupposes that polysemy among affixes exists, I do not argue here for the existence of the polysemy of affixes or provide a full overview of previous scholarship on the topic. The focus is instead on detailing empirical facts that reveal patterns in the polysemy of affixes.

Franz Rainer (2014) has provided an apt polemic in defence of the polysemy of affixes, arguing point by point for the necessity of analysing the complex semantics of affixes in terms of polysemy. He picks apart the 'polysemophobia' that has driven many scholars, who have 'dedicated their time and effort … with the intention to make polysemy disappear by portraying it as an automatic consequence of more abstract unitary meanings' (2014, 344,

353). Rainer points out the various problems and contradictions of such approaches, for instance proliferation of homonymy and inadequate semantic analysis, and proposes the recognition of structured networks of meanings as the most promising model for the polysemy of affixes. Rather than repeating Rainer's line of reasoning, this entry continues it by endorsing his conclusions and supporting them through meticulous empirical documentation.

Previous scholarship on the polysemy of affixes is heavily biased toward English suffixes (Lehrer 2003; Schulte 2015), and especially toward the suffix *-er* (Beard 1990; Ryder 1999; Panther and Thornburg 2002; Plag 2003; cf. the analysis of the Dutch equivalent *-er* in Booij 2010). In order to give a fresh perspective, I focus instead on data from Russian and Czech, examining prefixes and suffixes both as entire systems and as individual affixes.

While polysemy undoubtedly has a historical dimension (see Aikhenvald 2018) and some would even characterize the polysemy of affixes as an epiphenomenon analogous to grammaticalization (Arcodia 2014), this entry focuses on synchronic analysis.

Section 0 places polysemy in contrast with homonymy and contextual variation, concluding with a definition of polysemy that is subsequently applied to affixes. Section 0 offers a brief overview of the typology of affixes. Sections 0 and 0 present polysemous affixes in detail. The analyses of polysemous affixes in this entry are based on investigations not just of single affixes but of entire systems of affixation. Each section begins with a general picture of the patterns of polysemy that are active in a given system, then proceeds to a thorough examination of a single affix. The overall system of perfectivization by means of prefixation in Russian is the topic of Section 0. Seventeen prefixes perform this function in Russian, 16 of which are polysemous. The array of meanings expressed by each prefix is presented. This is followed by a thorough illustration of the polysemy of one prefix: *raz-* 'APART'. Section 0 takes as its point of departure a study of 212 derivational suffixes in Czech. The polysemy patterns of 16 of the most common Czech suffixes are displayed, and one suffix, *-ník* (used mostly to form nouns that refer to AGENTS and ENTITIES), is singled out for detailed analysis. Conclusions and suggestions for future research are offered in Section 0.

Illustrative examples are annotated in square brackets using standard Leipzig morpheme-by-morpheme glossing, which entails the addition of hyphens that are not part of the standard orthography of Russian and Czech. Both the Leipzig standard abbreviations for grammatical values and the meanings of affixes are given in SMALL CAPS.

<A>2 Polysemy

<P>One can begin with a preliminary definition of polysemy, as in (1).
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>   (1)   Polysemy is the situation that obtains when the same linguistic form (such as a morpheme or a word) has two or more different meanings.

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However, the application of this definition is complicated by the fact that it can be difficult to determine whether we really have the 'same' form, as well as whether we are faced with 'different' meanings. The problem is that 'same' and 'different' belong to two ends of a scale, and there is often no definitive dividing line between the two. Homonymy is usually recruited as a foil to provide helpful contrast in defining polysemy, and with good reason. In the case of homonymy, we observe an accidental convergence of form and a likewise random juxtaposition of meanings. If we use homonymy as our point of departure, we find a continuum that gradually moves in the direction of polysemy, where the form is certainly the same and the meanings are related to one another. On the polysemy part of the continuum we encounter contextual variation, where the various meanings of a linguistic form are variously influenced by their context.

We will take a brief tour of the homonymy–polysemy contextual variation spectrum, noting both the extremes where we find unambiguous examples and intermediate examples that don't conform to tidy distinctions. This exercise will help me to hone my definition of polysemy. I will start with examples of lexical polysemy, which functions in a way similar to the polysemy of affixes (Lehrer 2003, 218, 229), in order to get my bearings and prepare for the analyses in Sections 0 and 0. First I will contrast polysemy with homonymy, and then I will contrast polysemy with contextual variation.

Clear examples of homonymy most often result from diachronic sound changes that cause two words (or morphemes) that were once distinct to fall together. In Russian, for example, the word *leč-u* has two interpretations: [fly-PRS.1.SG] 'I fly', where the *č* is the result of the jotation of a *t*; and [heal-PRS.1.SG] 'I heal', where the *č* is the result of the palatalization of a *k*. Similarly, English *lie* has two interpretations: 'rest horizontally', from Proto-Indo-European **legh-*; and 'speak falsely', from Proto-Germanic **leuganan*. Alternatively, homonymy can arise as a result of borrowing, as in the case of Russian *bor* 'pine forest' and of the loanword *bor* 'boron'. The phonological identity that we find in these

examples results from historical accidents, and one can argue that the forms are not the same because they belong to different lexemes. The meanings are similarly unrelated. These are not examples of polysemy.

The question of whether we have homonymy or polysemy becomes muddled in situations where the forms are etymologically related but the meanings have drifted so far apart that the connection has become synchronically obscure. In Russian, *mir* can mean both 'peace' and 'world', and this distinction is exploited in the play on words *mir-u mir* [world-DAT.SG peace.NOM.SG] 'peace to the world'. What most Russians would probably recognize as two words that happen to sound the same (homonyms) is etymologically the same word. 'Peace' is the original meaning, and the only one available in most other Slavic languages; however, in the history of Russian the meaning of this word was extended from 'peace' to 'peaceful society' and from there to 'world' (the collection of peaceful societies). A similar story from the history of English shows that *flower* and *flour* are actually the same word: both stem from Proto-Indo-European **bhel-* 'thrive, bloom' and mean the 'best part', either of a plant or of a grain. The spelling difference supports the intuition of native speakers that these are two different words; but that is a relatively modern adjustment. In these examples we could argue that prior polysemy has been reinterpreted by native speakers as homonymy. However, it is unlikely that this reinterpretation happened suddenly; there must have been a transitional period, when both interpretations were possible. At any rate, we cannot hold native speakers responsible for the etymologies in their lexicon and must recognize that some examples that count as illustrations of homonymy for some speakers (or at certain points in the history of a language) may count as illustrations of polysemy for other speakers (or at different points in that history). It would be artificial to draw a clear line (see Langacker 2006).

Moving closer to clear polysemy we find examples where most native speakers would probably acknowledge, if pressed, that the word is the same (a 'correct' interpretation etymologically), even though the meanings are quite different. A Russian example is *maslo*, which signals both 'butter' and many kinds of 'oil'. The connection is to something greasy or fatty, and the word is etymologically related to a verb meaning 'smear'. However, the ambiguity can be inconvenient and is therefore often resolved by adding modifiers such as *slivočnoe* 'cream (adj.)', *mašinnoe* 'engine (adj.)', *rastitel'noe* 'vegetable (adj.)' and so on. A similar situation obtains with the English example *cap*, where various meanings can be

related to 'a covering on top'; and this word also tends to rely on disambiguation through modification, as in *bottle cap*, *baseball cap*, *lens cap*, *ice cap* and so on.

Further along the scale, we find examples of polysemy where native speakers agree without hesitation that the word is the same, although speakers might also be challenged to explain how the meanings differ. The original meaning of Russian *tjažëlyj* is 'heavy', and the word is etymologically related to the verb *tjanut'* 'pull' (as in the pull of gravity). However, in addition to this meaning, which is still present, the word has many others, such as 'hard, difficult, severe, complicated' – usually with respect to problems or struggles. A similar range of secondary meanings can be found in English *tough*, which originally applied to the texture and impenetrability of objects and functions as an approximate translation equivalent of *tjažëlyj* in many contexts where it describes challenges and misfortunes.

Far from being exceptional, polysemy is prevalent in language. To demonstrate, here is the top headline from the *New York Times* on the day of writing this passage (24 November 2020): 'After Weeks of Delay, Process Starts for a New White House Team'. All the words in this headline can be said to exhibit polysemy. *After* can refer to following something in space (*run after a toddler playing in the street*), in time (*run after eating*), or in the domain of purpose (*run after fame and fortune*). A *week* can be any seven-day cycle, a specific cycle that begins and ends on certain days (which differ across cultures), or the *work week* Monday to Friday, as opposed to the *weekend*. Dictionaries list more than a dozen meanings for *of*, and another for *for*; I will not reiterate them here. *Delay*, *process*, and *start* can all be interpreted as either nouns or verbs, and as verbs can be either transitive or intransitive (and *delay* can be an adjective). The changes in word class for *delay*, *process*, and *start* via conversion might be interpreted as producing either homonymy or polysemy. The indefinite article *a* can mean 'one' (*I found a penny*), 'same' (*birds of a feather*) or 'any' (*a person in need should receive help*). *New* can refer to existence (*a new baby*), familiarity (*visiting new places*), or difference (*I want a new boss*) – among other things. *White* can refer to the colour of objects (*white snow*), race (*white skin*), heat (*white hot*), innocence (*white lie*), or monotonousness (*white noise*). A *house* can shelter human residents, pets, government officials, publishers and many more, and can be a part of the zodiac and a verb as well. In this context, *White House* metonymically refers to the US president. There are many kinds of *teams*, both human and animal, and the word can be a noun, a verb, or an adjective. Similar polysemy can be found for most lexical stems and function morphemes in any language.

Langacker (2008, 37) states: 'A lexical item used with any frequency is almost invariably polysemous.'

One could push the quest for polysemy even further by remarking that, in a sense, every time a linguistic form is used, it has a slightly different meaning because it is used in a different context. That would go too far, obscuring significant differences under a flood of trivial variation. However, recognizing this extreme scenario highlights the fact that there is no clear demarcation between inherent and contextual variability in meaning. Polysemy and context are in a continuous dynamic relationship (Tuggy 1993).

While it is impossible to identify with precision the external borders between polysemy and homonymy on the one hand and contextual variation on the other, it is possible to investigate the internal structure of polysemy. Polysemy can be described as a radial category phenomenon characterized by a central prototypical meaning and a network of extensions of that meaning that are more or less peripheral (Lakoff 1987a). The peripheral meanings are not random but are related, directly or indirectly, to the prototype, and the structure of the network is coherent rather than haphazard. There may be, in addition, an abstract overall schematic meaning (Langacker 2008, 17). If we return to the example of *white*, the prototype is colour (e.g. of snow), hence the uses that qualify race and heat are relatively closely related to the prototype (they continue the theme of paleness), while the ones attached to innocence and monotonousness are more peripheral. The overall schema is one of lack of distinctiveness. While some meanings may be strongly distinct, others may blend into one another, as in the case of *a new idea*, which could be something completely original or merely something different and unfamiliar; in some contexts the difference between the meanings of *new* is not in focus.

Metaphor and metonymy play important roles in the structure of polysemy. Metaphor is present when a meaning is mapped from one domain (a source domain, often the physical environment) to another (a target domain) (Lakoff and Johnson 1980). Both Russian *tjažëlyj* 'heavy, difficult, serious' and English *tough* illustrate metaphorical extension from the physical domain to the assessment of a problem or a struggle, although the source domains differ. In Russian the source domain is weight, whereas in English the source domain is texture. Preferences for mapping a source to target domains can be language-specific, but not necessarily exclusive: speakers of English can also be challenged by *weighty problems* and speakers of Russian might take offense at *žëstkie slova* 'tough words'. A very common

pattern of metaphorical extension takes a spatial meaning and extends it to temporal and intentional domains, as we saw with the example of *after*.

Metonymy is present when a meaning shifts to follow associations between source and target within a single domain (Peirsman and Geeraerts 2006). Metonymic shifts can be whole to part, as we see in the difference between *week* as 'a seven-day cycle' and *week* as 'the work week'. Another common type of shift is between an action and its result, as we saw in the verb–noun relationships of *delay*, *process* and so on. In some cases both metaphor and metonymy are present. In *lens cap*, we have, first, a historical (diachronic) metonymy that takes us from Proto-Indo-European **kaput-* 'head' to a covering for the head. Synchronically, the covering is metaphorically mapped from a human head to the end of a lens and metonymically shifted from a location at the top to mere attachment, in any direction. The case of *bottle cap* is similar, here with an association with bottles. However, a *baseball cap* has an association with the uniform of baseball players, whereas *ice cap* is motivated by the substance that forms the cap.

In point of contextual variation, we observe varying degrees of overlap between the meanings expressed by a polysemous word and the meanings available in its immediate environment. Sometimes there is considerable overlap, other times there is contrast between the two. If we return to the example of problems in English versus Russian, we note that *struggles* and *problems* are by definition difficult. The adjectives in *tough struggle/problem* and *tjažëlaja bor'ba/problema*, both of which mean 'difficult struggle/problem', don't add much in the way of semantic content, since the meanings of the adjectives and of the nouns overlap. There is less overlap in other contexts, for instance *tough steak* and *tjažëlaja sumka* 'heavy bag', because steaks can be both tough and tender and bags can be both heavy and light. Overlap doesn't mean that the meaning is void but just that it is less obvious than in other contexts. The effect of semantic overlap can be likened to holding a white cloth up to a white wall. The cloth is almost invisible, but this doesn't mean that it isn't white, a fact that becomes obvious if we hold it up against a wall of another colour. And, whereas *white* provides contrast in the collocation *white wall* because walls can have many colours, *white noise* shows partial overlap, since noise is inherently meaningless and repetitive.

One can summarize the above observations in an enhanced definition of polysemy that focuses on typical characteristics:

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  (2) Polysemy is present when a single linguistic form has two or more meanings. The

meanings, which may blend into one another, are related to one another and often motivated by metaphorical or metonymic extension. Polysemy stands midway on a cline with gradual transitions to homonymy on one side and to contextual variation on the other. In some cases it may not be possible to draw strict distinctions between the three phenomena. The meaning expressed by a polysemous form may overlap or may contrast to varying degrees with the meaning expressed by the surrounding context.

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In order to establish the characteristics of polysemy, I have focused on lexemes because their meanings are generally more concrete and therefore easier to grasp than the meanings of grammatical morphemes, which are the topic of this entry. This gives us a solid foundation to rely on when turning to the more abstract and complex task of picking apart polysemy in affixes.

<A>3 Affixes

<P>Affixes are bound morphemes that can be further distinguished along two parameters: function and placement.

In terms of function, affixes come in two main types: derivational and inflectional. Derivational affixes mark associations among lexemes in a lexicon, for example among deverbal nouns in English marked with *-ion*, such as *relat-ion* (associated with *relate*), and, in Russian, among nouns marked with the equivalent *-enie*, such as *otnoš-enie* (associated with *otnosit'*). Inflectional affixes indicate the values of inflectional categories, for example plural number, marked by *-s* in English *book-s* or by *-i* in the Russian equivalent *knig-i* (where the affix also expresses nominative or accusative case). Note, however, that, while these are clear-cut cases, in others derivation and inflection are not so easily distinguished. Bybee (1985, 81), for example, states: 'One of the most persistent undefinables in morphology is the distinction between derivational and inflectional morphology.'

Affixes can appear in a variety of places in stems; the most common varieties are prefixes, which are placed at the beginning of a stem, and suffixes, which are placed at the end. Examples of prefixes are *un-* in English *un-load* and the equivalent *raz-* in Russian *raz-gruzit'* with the same meaning. Examples of suffixes are *-ion*, *-enie*, *-s*, and *-i* in the previous paragraph. Infixes appear in the middle of stems and are less common. An English example is the infixation of *-s-* when forming the plural *passersby* (compare singular *passerby*). A circumfix is a combination of a prefix and a suffix added simultaneously, as in Russian *do-*

govori-t'-sja [REACH.PFV-speak-INF-RECP], where both the prefix *do-* and the suffix *-sja* are added to a verb that means 'speak' to yield 'reach a mutual agreement'.

This entry provides detailed illustrations of polysemy through examples of derivational prefixes and suffixes in Russian and Czech. The material has been chosen so as to present relatively straightforward cases of polysemous affixes – that is, affixes with a single form and multiple meanings. Polysemy is also found in inflectional affixes. However, the languages that I focus on are fusional, which means that in inflectional affixes the expression of grammatical categories is combined. In other words, a given affix will express several categories, such as case + number, or tense + person + number. Furthermore, Russian and Czech have multiple inflectional classes, so that the 'same' combination of categories will be expressed by different forms, which index the declension classes. For example, the combination of dative case and singular number is expressed by the suffixes *-u*, *-e* or *-i* on Russian nouns, because each suffix also indexes a different paradigm type.

Although this entry focuses on derivational morphology, it is entirely possible to analyse the meanings of grammatical categories in terms of polysemy (see the analysis of the dative and instrumental cases in Janda 1993 and of the perfective aspect in Janda 2004). The Russian prefixes described in Section 0 express both a path (and related meanings) and perfective aspect (abbreviated as PFV). The current entry focuses only on the polysemy of the path and related meanings, which are distinct for each prefix. The meanings of the Czech derivational suffix *-ník* are somewhat more abstract, but also combine with a specification that the resulting word is a noun. Here again I will focus on the abstract meanings, as described in Section 0.

<A>4 Case study 1: Polysemy in Russian verbal prefixes

<P>A prominent pattern in the Russian verbal lexicon consists of imperfective simplex verbs that can combine with prefixes to yield perfective verbs. An example is the imperfective *reza-t'* [cut.up-INF] and the prefixed perfective *raz-reza-t'* [APART.PFV-cut.up-INF], both of which mean 'cut up'. There are approximately 17 prefixes like *raz-*; the exact number depends on whether or not some variants are considered allomorphs, which is a matter of controversy where the prefixes *o(b)-* and *v(o)z-* are concerned (see Endresen 2015). All the Russian perfectivizing prefixes can express a path, which is usually most obvious when they combine with verbs of motion (Tolskaya 2014; Nesset 2020; for comparable Croatian prefix

semantics, see Belaj and Buljan 2016). For example, if we add *raz-* to the verb *vez-ti* 'convey by vehicle', the result is *raz-vez-ti* [APART.PFV-convey-INF] 'deliver to various places by vehicle'. The path meanings of the Russian prefixes result from their etymological associations with prepositions. The path meaning of a prefix is, typically, its most concrete and prototypical meaning. Each prefix (except *v-* 'INTO') has a larger network of meanings, which are related to the prototypical path meaning, and many of the meanings also have metaphorical extensions. Table 1 gives an overview of both the path meanings and the other, related meanings of the Russian perfectivizing prefixes. All the verbs in Table 1 are cited in the infinitive form.

<TAB1>

Table 1 is a compilation of analyses from several sources in which the relationships between meanings are discussed (Leblanc 2010; Viimaranta 2012; Janda et al. 2013); and the meanings of thousands of prefix + verb combinations are presented in detail at http://emptyprefixes.uit.no/book.htm. Table 1 does not include prefixes that do not perfectivize verbs, such as *pred-* in *pred-čuvstvova-t'* [BEFORE-feel-INF] 'anticipate'. Prefixes that end in a consonant, like *iz-*, may add a fleeting vowel *-o-* before stems that begin with a consonant cluster, as in *izo-j-ti* [OUT.OF.A CONTAINER.PFV-walk-INF] 'emanate from'. Prefixes that end in *-z*, like *iz-*, will devoice to *s* (reflected orthographically) before stems that begin with a voiceless obstruent, as in *is-pisat'* [EXHAUST.A.SURFACE.PFV-write-INF] 'fill up with writing'.

Each row in Table 1 presents information and examples relevant to a given prefix. The first row, for instance, presents the prefix *do-* 'REACH THE END'. The prototypical path meaning of each prefix is given in the second column of the table, along with an example of the path meaning when the prefix is combined with the verb *id-ti* 'walk', which contracts to *-j-ti* in combination with prefixes. For the prefix *do-*, the path meaning is REACH THE END, and the combination with 'walk' is *do-j-ti* [REACH.THE.END.PFV-walk-INF] 'reach a place on foot'. The third column of Table 1 lists the other meanings of the given prefix. All the meanings of a given prefix listed in the third column are related to the prototypical path meaning, and the relationships among the meanings structure the polysemy of the prefix. For *do-* 'REACH THE END', the related meanings are EXCESS and ADD. In the fourth column of Table 1 there is an example designed to illustrate one of the related meanings of the prefix through this format: *li-t'* 'pour' > ADD > *do-li-t'* 'add by pouring'. In other words, if we take the imperfective simplex verb *li-t'*, which means 'pour', and combine it with the prefix *do-*

with the meaning ADD, we get the perfective verb *do-li-t'* with the meaning 'add by pouring'. The prefix *v-* has only a path meaning, so columns three and four are blank. Instead of listing examples for the prefix *raz-* 'APART', I refer to the examples in the remainder of this section.

Table 1 is meant to give an overall impression of the extent of polysemy in the system of Russian perfectivizing verbal prefixes. In the remainder of this section I examine in more detail the polysemy of one of these prefixes, namely *raz-* 'APART', visualized in Figure 1.
<FIG1>

The radial category depicted in Figure 1 shows the APART meaning as the central prototype; its associative links to the remaining meanings are explained by transitional or closely related examples. I examine these meanings one by one and illustrate them with examples from the Russian National Corpus (ruscorpora.ru), each cited with its 'passport' (author. *title*. year). This presentation condenses the analyses of more than 200 verb stems that combine with the prefix *raz-* (more can be found at http://emptyprefixes.uit.no/raz_eng.htm).

<B>4.1 APART

<P>The prototypical meaning of *raz-* involves the rendering of a unity into pieces, as in example (3), where the meaning of the prefix overlaps with the meaning of the verb root.

<NEX>

(3)   *Ja **ras-poro-l-a** rubašk-u*

      [I.NOM **APART.PFV-rip.seam-PST-F.SG** shirt-ACC.SG]

      'I **tore apart** a shirt'

                                       (Lidija Smirnova. *Moja ljubov'*. 1997)

<line space>

If the unity is a group of things, then a transitive verb prefixed by *raz-* will describe dispersal – as in (4), where the driver disperses the other party goers to their various homes. With intransitive verbs we often find a circumfix with *-sja* expressing its reciprocal meaning to yield *raz-…-sja* 'go in different directions', as in (5).

<NEX>

(4)   *Posle pominal'n-ogo obed-a 'taksist po licenzi-i' **raz-vëz** vs-ex po dom-am*.

      [after memorial-M.GEN.SG dinner-GEN.SG taxi.driver.NOM.SG along license-DAT.SG **APART.PFV-convey.PST.M.SG** all-ACC.PL along house-DAT.PL]

      'After the memorial dinner, the 'designated driver' **drove** everyone to their homes.'

(Viktor Slipenčuk. *Zinziver*. 2001)

(5) *Šlippenbax za-xoxota-l tak, čto **raz-lete-l-i-s'** bumažn-ye salfetk-i.*

[Schlippenbach.NOM.SG BEGIN.PFV-laugh-PST.M.SG so, that **APART.PFV-fly-PST-PL-RECP** paper-NOM.PL napkin-NOM.PL]

'Schlippenbach started to laugh so hard that the paper napkins **flew in all directions**.'

(Sergej Dovlatov. *Čemodan*. 1986)

</NEX>

An extension to the domain of emotion is illustrated in (6). The simplex verb *šata-t'* means 'shake', and in the physical domain *ras-šata-t'* means 'shatter by shaking', but this verb is primarily used metaphorically, with reference to nerves, which feel as if they have been shattered by misfortune.

<NEX>

(6) *Naš-e tjažël-oe mater'jal'n-oe položeni-e okončatel'no **ras-šata-l-o** naš-i nerv-y.*

[Our-N.NOM.SG difficult-N.NOM.SG material-N.NOM.SG situation-NOM.SG definitively **APART.PFV-shake-PST-N.SG** our-ACC.PL nerve-ACC.PL]

'Our difficult financial situation definitively **shattered** our nerves.'

(A. M. Remizov. *Vzvixrennaja Rus'*. 1917–1924)

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A metonymic relation is highlighted in (7), where bowing is a ritual part of taking one's leave and thus of causing members of a group of people to move apart. Here the *-sja* suffix is part of the base *klanja-t'-sja* 'bow', and therefore is reflexive rather than reciprocal.

<NEX>

(7) *Viktor vzja-l čemodan v lev-uju ruk-u, prav-oj eščë pri-gubi-l na dorožk-u kon'jačk-u i **ras-klanja-l-sja**.*

[Victor.NOM.SG take.PFV-PST.M.SG suitcase.ACC.SG in left-F.ACC.SG hand-ACC.SG right-F.INS.SG still ATTACH.PFV-place.at.lips-PST.M.SG on road-ACC.SG cognac-ACC.SG and **APART.PFV-bow-PST.M.SG-REFL**]

'Viktor took his suitcase in his left hand, used his right to take a swig of cognac for the road and **took a parting bow**.'

(Vasilij Šukšin. *Pečki-lavočki*. 1970–1972)

<B>4.2 CRUSH

<P>The link between APART and CRUSH is metonymic: the imagery of edges moving apart is part of the scenario of crushing something. Most of the verbs that combine with *raz-* in this meaning denote crushing or flattening, for instance by trampling, as in (8), though there are also more generalized verbs that simply mean 'destroy', as in (9).

<NEX>

(8) *Miš-a do-kuri-l sigaret-u do sam-ogo fil'tr-a, i jarostno **ras-topta-l** eë kabluk-om.*

[Misha-NOM.SG REACH.PFV-smoke-PST.M.SG cigarette-ACC.SG to own-M.GEN.SG filter-GEN.SG and furiously **CRUSH.PFV-stamp-PST.M.SG** 3.SG.F.ACC heel-INS.SG]

'Misha smoked his cigarette all the way down to the filter and furiously **crushed** it with his heel.'

(Evgenij Proškin. *Mexanika večnosti*. 2001)

(9) *Zemle-trjaseni-e nača-l-o-s' pod utr-o. Perv-yj že tolčok **raz-ruši-l** vodo-naporn-uju bašn-ju.*

[Earth-quake-NOM.SG begin.PFV-PST.N.SG-REFL under morning-ACC.SG first-M.NOM.SG emphasis jolt-NOM.SG **CRUSH.PFV-destroy-PST.M.SG** water-pressure-F.ACC.SG tower-ACC.SG]

'The earthquake began toward morning. The first jolt **destroyed** the water tower.'

(Sergej Dovlatov. *Naši*. 1983)

<B>4.3 SPREAD

<P>In the SPREAD meaning, edges or parts move away from one another, but without any destruction. This meaning is metonymically related to the APART meaning, since the edges or parts move away, but do not separate to go each one its own way. In the physical domain this can involve spreadable substances, as in (10), growth, as in (11), or unwinding. Metaphorically, SPREAD can mean development (an extension from unwinding) and elaboration, as in (12).

<NEX>

(10) ***Ras-kata-l-a** test-o, po-stavi-l-a pirog v duxovk-u, i tut pozvoni-l-i v dver'...*

[**SPREAD.PFV-roll-PST-F.SG** dough-ACC.SG RESULT.PFV-place-PST-F.SG pie-ACC.SG in oven-ACC.SG and here RESULT.PFV-ring-PST-PL in door-ACC.SG]

'She **rolled out** the dough, put the pie in the oven, and right then someone rang the doorbell.'

(Simon Solovejčik. *Vataga 'Sem' vetrov'*. 1979)

(11) *Esli kornev-aja sistem-a sil'no **raz-ros-l-a-s'**, xorošo **raz-vetvi-l-a-s'**, to ona po-da-ët signal vverx, v nad-zemn-uju čast'.*

[If root-F.NOM.SG system.NOM.SG strongly **SPREAD.PFV-grow-PST-F.SG-REFL** well **SPREAD.PFV-branch-PST-F.SG-REFL** then 3.SG.F.NOM RESULT.PFV-give-PRS.3.SG signal-ACC.SG up in above-ground-f.ACC.SG part-ACC.SG]

'If the root system **has spread by growing** significantly, **has branched out** well, then it sends up a signal to the part [of the plant that is] above ground.'

(Vladimir Čub. *Čto izučaet nauka botanika?* 1998)

(12) *Ja **raz-rabota-l** strategičesk-ij plan, kotor-yj vam stan-et jasen vposledstvii.*

[1.SG.NOM **SPREAD.PFV-work-PST.M.SG** strategic-M.ACC.SG plan.ACC.SG which-M.NOM.SG 2.PL.DAT become.PFV-PRS.3.SG clear.M.SG subsequently]

'I **have worked out** a strategic plan, which will subsequently become clear to you.'

(Vladimir Vojnovič. *Ivan'kiada, ili rasskaz o vselenii pisatelja*

Vojnoviča v novuju kvartiru. 1976)

<B>4.4 SWELL

<P>The SWELL meaning is similar to SPREAD, but makes a metonymic shift to a three-dimensional object that becomes larger as a result of the activity of the verb. An example in the concrete domain of physical objects is given in (13), whereas in (14) we see a metaphorical extension to the sphere of wealth, no doubt also supported by the allusion to a purse swelling with money.

NEX>

(13) *Sredn-ij palec u nego **ras-pux** ot udar-a.*

[middle-M.NOM.SG finger.NOM.SG by 3.SG.M.GEN **SWELL.PFV-swell.PST.M.SG** from blow-gen.sg]

'His middle finger **swelled up** from the blow.'

(Sati Spivakova. *Ne vsë.* 2002)

(14) *U nas est' kategorij-a ljud-ej, kotor-ye **raz-bogat-e-l-I** I sta-l-I milliarder-ami, kak u nas govor-jat, v odnočas'-e.*

[by 1.PL.GEN be.PRS.3.SG category-NOM.SG people-GEN.PL who-NOM.PL **SWELL.PFV-rich-become-PST.PL** and become.PFV-PST.PL billionaire-INS.PL like by 1.PL.GEN say-3.PL, in short.period.of.time-LOC.SG]

'We have a category of people who **got rich** and became billionaires in one fell swoop, as we say.'

(Valerij Lebedev. *Otečestvo v opasnosti*. 2003)

<B>4.5 DISSOLVE

DISSOLVING is similar to SWELLING in that a substance expands, and similar to APART in that parts of the substance move away from one another. This meaning is found both when an object dissolves in a liquid and when something melts, as in (15).
<NEX>

(15)   *Dva dn-ja sypa-l sneg, potom **ras-taja-l, i po-li-l dožd'***.

[two day-GEN.SG sprinkle-PST.M.SG snow.NOM.SG, then **DISSOLVE.PFV-melt-PST.M.SG** and RESULT.PFV-pour-PST.M.SG rain.NOM.SG]

'Snow was coming down for two days, then it **melted**, and then rain came pouring down.'

(Sergej Kozlov. *Pravda, my budem vsegda?* 1969–1981)

<B>4.6 EXCITEMENT

<P>Physical excitement produced in objects by heating causes them to swell and spread. This meaning is used both in the concrete domain, as in (16), and metaphorically, in the domain of emotional outbursts, as in (17).
<NEX>

(16)   *Zinaid-a Nikolaevn-a ... **razo-gre-l-a** v duxovk-e francuzsk-ij baton.*

[Zinaida-NOM.SG Nikolaevna-NOM.SG **EXCITEMENT.PFV-heat-PST-F.SG** in oven-LOC.SG French-M.ACC.SG baguette-ACC.SG]

'Zinaida Nikolaevna ... **heated up** the French baguette in the oven.'

(Ol'ga Novikova. *Ženskij roman*. 1993)

(17)   *Serdc-e za-stuča-l-o. Ja čut' ne **ras-plaka-l-sja***.

[heart-NOM.SG BEGIN.PFV-pound-PST-N.SG 1.SG.NOM almost not **EXCITEMENT.PFV-weep-PST.M.SG-REFL**]

'My heart started to pound. I almost **burst into tears**.'

(Grigorij Gorin. *Ironičeskie memuary*. 1990–1998)

<B>4.7 UN-

<P>This meaning of the prefix *raz-* presupposes that something has been put together and is subsequently taken apart. In (18) a man has been tied up, and a woman unties the ropes. Metaphorically this meaning is extended to a wide variety of domains, in particular to decoding (literally un-encoding) or making sense of things, as in (19) and to changing one's mind (literally un-thinking), as in (20).

<NEX>

(18)　***Raz-vjaza-l-a*** *verevk-i, kotor-ymi by-l-i s-puta-n-y ego ruk-i i nog-i.*

[**UN.PFV-tie-PST-F.SG** rope-ACC.PL which-INS.PL be-PST-PL TOGETHER.PFV-tangle-PST.PASS.PTCP-PL 3.SG.M.GEN hand-NOM.PL and foot-NOM.PL]

'She **untied** the ropes that bound his hands and feet.'

(Tat'jana Tronina. *Nikogda ne govori 'navsegda'.* 2004)

(19)　*Professor Dèjvid Pejdž perv-ym (v 2003 god-u)* ***ras-šifrova-l*** *posledovatel'nost' čelovečesk-oj Y-xromosom-y.*

[professor.NOM.SG David.NOM.SG Page.NOM.SG first-M.INS.SG in 2003 year-LOC.SG **UN.PFV-encode-PST.M.SG** sequence.ACC.SG human-F.GEN.SG y.chromosome-GEN.SG]

'Professor David Page is the first person (in 2003) who **decoded** the sequence of the human Y chromosome.'

(Leonid Krajnov. *Buduščee mužskoj xromosomy // 'Znanie-sila'.* 2013)

(20)　*Gur'ev obide-l-sja i* ***raz-duma-l*** *nas provoža-t'*

[Gur'ev.NOM.SG offend.PFV-PST.M.SG-REFL and **UN.PFV.think-PST.M.SG** 1.PL.ACC accompany-INF]

'Gur'ev took offense and **changed his mind about** accompanying us'

(Sergej Dovlatov. *Zapovednik.* 1983)

</NEX>

<P>The Russian prefix *raz-* serves as a rich illustration, reflecting all of the characteristics of polysemy cited in my definition in (2). *Raz-* is a single linguistic form – a morpheme with the allomorphs *ras-* and *razo-* – and has seven meanings that are, to various degrees, distinct from and related to one another. Extensions of the meaning of *raz-* are motivated by metaphor and metonymy. The meaning of *raz-* is in a dynamic relationship with its immediate context, in particular the verb to which it attaches. Table 2 rearranges the

examples given here so as to display the variation in this dynamic relationship between the prefix and the simplex verbs to which it attaches.

<TAB2>

9.45

In the upper part of Table 2, the semantic overlap is strong and the meaning of *raz-* is very similar to the meaning of the imperfective simplex verb. Ripping apart is a means to take something APART, branching out is a means of SPREADING, melting is a means of DISSOLVING, and we have a tautology of 'swell' with SWELL. The prefixes in examples like those in the top of Table 2 have traditionally been termed 'empty prefixes' (Šaxmatov 1952, 201–202; Avilova 1959, 1976; Tixonov 1964, 1998; Forsyth 1970, 38–43; Vinogradov 1972, 395–424). The approach suggested here is that we observe instead semantic overlap of the type described in Section 0: an overlap of the meanings of the prefix and the verb. The semantic overlap interpretation of prefixes in such combinations is supported by Vey (1952), van Schooneveld (1958), Isačenko (1960), Gorbova (2011), and Janda et al. (2013).

The middle part of Table 2 presents combinations where the meaning of the imperfective simplex verb is compatible with the meaning of *raz-*, though the overlap is not as strong. One can stamp one's feet without crushing anything, and destruction can be achieved by various means, of which crushing is only one. Expansion of resources when getting rich is compatible with swelling. Heating up and bursting into tears are possible types of EXCITEMENT.

In the combinations at the bottom of Table 2, the meaning of *raz-* is unrelated to the meaning of the simplex verb. When the meanings of the prefix and of the simplex verb contrast, the meaning of the prefix coerces a new meaning for the prefixed perfective verb, as we see in this group of verbs. The motion verbs meaning 'fly' and 'convey by vehicle' do not in themselves specify any direction; the path of movement is determined by the APART meaning of *raz-*. Shaking does not necessarily entail the breaking apart of an object; that nuance is supplied by *raz-*. Bowing can be done under many circumstances; only with *raz-* does it refer to rituals of departure. One can roll a variety of rounded objects but, when prefixed by *raz-*, the verb with this meaning subsumes the use of a rolling pin and the direct object is dough that is spread out prior to baking. Working is a heterogeneous intransitive activity, but in combination with *raz-* it implies the development of something and requires a

direct object. In its UN- meaning, *raz-* yields perfective verbs that denote the opposite of the meanings of the corresponding imperfective simplex verbs: 'tie' becomes 'untie', 'encode' becomes 'decode', and 'think, plan' becomes 'undo one's plan'.

The facts of the polysemy of Russian aspectual prefixes comport well with the model of language proposed by cognitive linguistics (Langacker 2008) and construction grammar (Fillmore 1985; Goldberg 1995, 2006; Croft 2001). From the perspective of cognitive linguistics, all linguistic expressions are constructions, constructions are the basic units of language, and a language is ultimately a system of constructions termed a 'constructicon' (see Lyngfelt et al. 2018). Constructions are defined as conventionalized pairings of form and meaning (also called 'symbolic assemblies' by Langacker). Morphemes such as prefixes are the minimal type of construction; compare Goldberg's (2006, 18) statement that 'it's constructions all the way down' with Langacker's (2008,16) definition of the morpheme as 'an expression whose symbolic complexity is zero, i.e. it is not at all analyzable into smaller symbolic components'.

Cognitive linguistics recognizes meaning as the primary motive of linguistic phenomena. From this perspective there is no crisp division between lexicon and grammar – differences are a matter of degree, and both lexicon and grammar are semantically motivated. Affixes occupy an intermediate place in the lexicon–grammar continuum, as they have relatively schematic yet complex meanings. While we observe that polysemy is ubiquitous in language, its behaviour is neither chaotic nor random, but structured by metaphorical and metonymic associations; and these associations are in turn motivated by the physical realities of the human body and our earthly existence.

The crucial roles played by metaphor and metonymy in the semantics of affixes can facilitate cross-linguistic typological comparison. Both metaphor and metonymy can be described as SOURCE FOR TARGET shifts, and then it becomes possible to conceive of a taxonomy of shifts that potentially includes all languages. Many SOURCE FOR TARGET shifts are probably shared across most (possibly all) languages. An example would be the SPACE FOR TIME metaphor, which we find in expressions such as *on Monday* (where a day is metaphorically conceived of as a surface) and *in summer* (where summer is metaphorically conceived of as a container). Haspelmath (1997) has shown that the SPACE FOR TIME metaphor is probably universal across languages, although the details of how exactly it is implemented differ; compare Russian *v ponedel'nik* 'on Monday', where a day is conceived

of as a destination, and *letom* 'in summer', where summer is conceived of as a path. Some SOURCE FOR TARGET shifts are relatively common, some may be rare or idiosyncratic.

If we take an inventory of the meanings of affixes and their SOURCE FOR TARGET shifts in languages, we can determine the type frequency of their exponents, and ultimately also their token frequency. This line of research could reveal much about how meaning is structured in languages, as well as about what patterns are most common and what patterns are rare.

<A>5 Case study 2: Polysemy in Czech derivational suffixes

<P>The polysemy of Czech derivational suffixes is expressed in the form of varieties of metonymy patterns. The function of derivational suffixes is primarily metonymic; the suffix indicates that there is some association between a source concept (represented by the base word) and a target concept (represented by the suffixed word). The exact nature of the relationship between the source and the target is underspecified by the suffix and highly dependent upon context, in particular the meaning of the base word that the suffix attaches to.

The behaviour of metonymy in the meaning of derivational suffixes is parallel in many ways to that of lexical metonymy, so it helps to begin with lexical examples. Peirsman and Geeraerts (2006) present a detailed model of how metonymical meanings can be classified as SOURCE FOR TARGET shifts, on the basis of examples of lexical metonymy across a sample of European languages. In lexical metonymy, the source is the concept usually associated with a given word and the target is a different, related meaning accessed in the given context. With the derivational suffixes examined here, the suffix supplies the context that triggers the metonymic association. In other words, the suffix tells us to use the source concept of the base word as a mental address, in order to locate another, nearby concept that is the target. The following sets of examples in English and Czech illustrate three SOURCE FOR TARGET metonymy patterns and how they function both in the lexicon and in derivation.
<NEX>

(21)　　　CONTAINED FOR CONTAINER

(a)　**The milk** *tipped over.* (cf. Peirsman and Geeraerts 2006, 281)

(b)　Czech *květin-áč* (*květina* 'flower' + *-áč*) 'flowerpot'

(22)　　　PART FOR WHOLE

(a) *We need **a good head** for this project.*

(b) Czech *břich-áč* (*břicho* 'belly' + *-áč*) 'person with a large belly'

(23) CHARACTERISTIC FOR ENTITY

(a) *He's **a genius**.*

(b) Czech *nah-áč* (*nahý* 'naked' + *-áč*) 'naked person'

</NEX>

<P>The English examples illustrate lexical metonymy that parallels the examples of metonymy signaled by the Czech suffix *-áč*. In (21a) the source is the milk and the target is the carton or glass that the milk is in; it is not the milk that tipped over, but the carton or glass that contained the milk. In (21b) the source is the flower, and the suffixed Czech word likewise uses something that is contained (the flower) to locate the concept of the container (the flowerpot). In (22a) the source is a head and the target is a person; if we need a smart collaborator on a project, their head (the location of a clever brain) is salient, and we can use the body part to refer to the whole person. In a parallel way, the Czech noun *břich-áč* in (22b) refers to a person who is identified by a prominent belly. In (23a) the characteristic of being a genius is used to refer to a person with that characteristic. In a similar way, Czech *nah-áč* in (23b) indicates a person by reference to their nakedness. Note that the Czech suffix *-áč* signals three different metonymy patterns in these examples. The data presented in Janda (2011) show that multiple metonymy patterns are common in derivational suffixes, not just in Czech but also in Russian and Norwegian. It is on the basis of the multiplicity of metonymy patterns that we observe polysemy in such suffixes.

Table 3 gives an inventory of the terms that apply to sources and targets in metonymy patterns. This inventory is based on the classification of lexical metonymy developed by Peirsman and Geeraerts (2006), with small adjustments to accommodate affixal metonymy suggested by Janda (2011).

<TAB3>

Most types of metonymy patterns are bidirectional, so the majority of the terms in Table 3 can appear as both sources and targets. For example, we observe ACTION FOR PRODUCT if we start with the verb *vyrobi-t* 'produce' and add the suffix *-ek* to obtain the noun *výrob-ek* 'product'. In the opposite direction, we observe PRODUCT FOR ACTION if we start with the noun *kousek* 'piece' and add the suffix *-ova-t* to obtain the verb *kousk-ova-t* 'break into pieces'. In the data on suffixal metonymy in Russian, Czech and Norwegian, the

metonymy pattern PRODUCT FOR AGENT is unidirectional, as observed in Czech *soch-a* 'sculpture' suffixed with *-ař* to yield *soch-ař* 'sculptor' (Janda 2011, 385). However, the opposite pattern of AGENT FOR PRODUCT is well attested in lexical metonymy, as we see in examples such as *I have a whole shelf of Shakespeare*, where the author is used to reference his works.

Table 4, which gives an overview of the 16 most common and productive suffixes that derive Czech nouns, is extracted from a database of over 560 metonymy patterns found in Czech derivation (Janda 2011). The larger database details complex metonymy patterns also for suffixes that derive verbs and adjectives. The examples in Tables 4 and 5 are illustrations of common, productive patterns, each one of which is associated with the derivation of numerous words – both words that are well established in the lexicon and potential words that native speakers can create as needed. All the suffixes in Table 4 are polysemous, having associations to five or more SOURCE FOR TARGET metonymy patterns; two of the suffixes, *-in-a* and *-ník*, are associated with 16 metonymy patterns each.

<TAB4>

Sixteen suffixes are presented in the first column of Table 4. Some of them have a hyphen because they contain an inflectional suffix that indicates the declension type that the resulting noun belongs to. For example, the final *-a* in *-enk-a* is the nominative singular suffix that indicates that the noun follows a declension paradigm of feminine nouns. The lack of an inflectional suffix indicates a masculine declension paradigm. There are numerous morphophonemic alternations in Czech that can be ignored in this analysis, since they are automatic alternations. Some suffixes are listed in two versions, such as *-ař/-ář*, with either a short *a* or a long *á*; this reflects vowel length alternations. There are also alternations between the vowel *e* and its absence – compare the earlier example of *kousek* 'piece', *kousk-ova-t* 'break into pieces' – and consonant alternations such as in *mysli-t* 'think', *myšl-enk-a* 'idea' in Table 4. Because the suffixes in Table 4 produce nouns, morphemes that signal other parts of speech are usually truncated in derivation, as in *žebra-t* 'beg' vs *žebr-ák* 'beggar' (where *-at* signals a verb) and *blb-ý* 'stupid' (adjective), *blb-ec* 'fool' (where *-ý* signals an adjective).

The second column in Table 4 presents the SOURCE FOR TARGET metonymy patterns associated with each suffix. The metonymy patterns are listed in a condensed format, collapsing patterns that share either a source or a target. For example, the suffix *-ař/-ář* is associated with eight metonymy patterns: five different sources, listed in parentheses as

ACTION, INSTRUMENT, LOCATION, PATIENT, PRODUCT, all combine with AGENT, and three additional patterns do not share a term. Thus the full list of metonymy patterns associated with *-ař/-ář* is: ACTION FOR AGENT, INSTRUMENT FOR AGENT, LOCATION FOR AGENT, PATIENT FOR AGENT, PRODUCT FOR AGENT, CONTAINED FOR CONTAINER, GROUP FOR ENTITY, POSSESSED FOR POSSESSOR. Note that in some cases it is the target that is shared instead, as we see with *-dl-o*, which is also associated with eight metonymy patterns, seven of them beginning with ACTION FOR… and the eighth being STATE FOR LOCATION.

The third column in Table 4 contains one illustrative example for each suffix, listing first the base word, its gloss and word class (n. = noun, v. = verb, adj. = adjective, num. = numeral), then the relevant metonymy pattern surrounded by the symbol > to indicate derivation, and finally the suffixed noun with its gloss. In the top row, for example, '*zub* 'tooth' n.' identifies the base noun, the metonymy pattern is PATIENT FOR AGENT, and the suffixed noun is *zub-ař* 'dentist'.

While the arrays of patterns in Table 4 are complex and overlapping, they are neither random nor chaotic. Each suffix has its own semantic profile and trends. For example, the suffix *-ař/-ář* usually indicates a person who is an agent, a possessor, or a member of a group. The suffix *-dl-o* tends to identify things (rarely persons) via reference to associated actions or states. The suffixes *-n-a* and *-išt-ě* usually denote locations.

Table 4 gives an overall impression of the extent and complexity of polysemy among Czech derivational suffixes, but we need to look closer if we want to understand the interplay of SOURCE FOR TARGET patterns in structuring meanings. We will therefore analyse in more detail the polysemy of one suffix, namely *-ník*, with the help of the examples presented in Table 5. There the first column lists the source term, which describes the role of the base word; and the base word is presented in the second column with its gloss and word class. The third column lists the target term, which describes the role of the derived word. For example, in the first row we have an example of ACTION FOR AGENT derivation from the verb *pracova-t* 'work' to the noun *pracov-ník* 'worker'. The examples here represent larger groups of derived words that are acknowledged in Czech dictionaries and can motivate the creative derivation of new words as well.

Most of the metonymy patterns of the suffix *-ník* can be grouped according to three targets: AGENT, ENTITY and LOCATION. In addition to making reference to the ACTION performed, as in the example of *pracov-ník* 'worker', the suffix *-ník* identifies AGENTS according to a variety of relationships with other items. A *soustruh* 'lathe' is a tool for a type

of machinist, and thus the relationship expressed by *soustruž-ník* 'lathe-worker' is that of INSTRUMENT FOR AGENT. A *knihov-ník* 'librarian' is a person with an AGENT role who works in a *knihovn-a* 'library', so the relevant relationship is LOCATION FOR AGENT. The next three examples differ in the way the AGENT interacts with the item named by the base word. In the case of *zlat-ník* 'goldsmith', gold describes the MATERIAL out of which the AGENT makes things. The *papír-ník* 'seller of paper goods' doesn't create the paper, which is a PATIENT in sales transactions. The *kouzel-ník* 'magician' creates the magic, which is therefore a PRODUCT.

The first example in the ENTITY group is possibly transitional, since one could view a *služeb-ník* 'servant' either as one among others in a *služb-a* 'service', and thus as an ENTITY, or alternatively as an AGENT (someone who works). The ENTITY 'one among others' is the only likely interpretation for the *družstev-ník* 'collective farmer', who is identified as a member of a GROUP, the *družstv-o* 'collective'. The *par-ník* 'steamboat' uses *pár-a* 'steam' in order to run, thus MATERIAL FOR ENTITY. A *pět-ník* '5 crown coin' is named via reference to the numeral *pět* 'five', thus QUANTITY FOR ENTITY. A *střevíč-ník* 'lady-slipper' is a type of flower that looks like a fancy women's shoe, a *střevíček*. This ENTITY FOR ENTITY relationship is motivated by an iconic relationship between the shapes of the two entities (also known as an image metaphor: see Lakoff 1987b).

A *chod-ník* 'sidewalk' is a LOCATION where the ACTION of walking takes place. Notice that the next two metonymy patterns are mirror images of each other. A *ryb-ník* 'fishpond' is a LOCATION where one finds *ryb-a* 'fish', and therefore illustrates LOCATED FOR LOCATION. Similarly, in the penultimate row of Table 5 we find the example of *čaj-ník* 'teapot', where CONTAINED FOR CONTAINER is a specific version of LOCATED FOR LOCATION. We observe the opposite pattern in *skal-ník* 'cotoneaster', which is a flower found on a *skál-a* 'cliff' and thus illustrates LOCATION FOR LOCATED.

The last row in Table 5 shows a meaning of *-ník* in which an ACTION, namely the collision of two vehicles, is used to access a PART of a vehicle: the bumper designed to endure the impact of a collision. This metonymy pattern is coherent with other uses of *-ník* that have an ACTION as their target: ACTION FOR AGENT and ACTION FOR LOCATION.

Figure 2 visualizes the metonymy patterns in Table 5. Terms that serve as sources appear without boxes and with arrows pointing toward their respective targets, which are enclosed by boxes. Here LOCATION and LOCATED are enclosed by boxes and serve as both sources and targets.

<FIG2>

Figure 2 is complex, but structured and by no means random: AGENTS play a special role as targets in the meaning of *-ník*, particularly in connection with an ACTION and associated terms – INSTRUMENT, PRODUCT, PATIENT, MATERIAL, ACTION, and LOCATION; ENTITIES are next in terms of density of connections, and there is a possibility of overlap between AGENTS and ENTITIES, as in the example of *služeb-ník* 'servant'; and CONTAINED FOR CONTAINER parallels LOCATED FOR LOCATION.

While metonymy tends to be somewhat overlooked, overshadowed by the greater attention paid to metaphor, metonymy plays a prominent role in word formation. Study of the entire system of Czech word formation (in comparison with the systems of Russian and Norwegian: see Janda 2011) shows consistent parallels with phenomena of lexical metonymy evidenced across languages of Europe (Peirsman and Geeraerts 2006). The shared SOURCE FOR TARGET structure of metonymy, both for lexemes and for affixes, makes it possible to conceive of an ultimate inventory of SOURCE FOR TARGET shifts that might be universal or come close to being so. Similar analyses across a range of languages would give us greater insight into the networks of associations that can be embedded in language and to the relation of grammar to cognition (Talmy 2000, Chapter 1). This research could be enhanced by recourse to corpus data to establish the relative frequency of various SOURCE FOR TARGET shifts within and across languages.

<A>6 Conclusion

<P>Sections 0 and 0 have presented the polysemy of affixes from the perspective of entire systems of affixation in Russian and Czech respectively. Polysemy is pervasive both in the system of Russian perfectivizing prefixes and in the system of Czech derivational suffixes. Russian prefixes have as their prototype a path meaning such as DEPART, ARRIVE, THROUGH, DOWN. Additional meanings are extended from it via metaphor, metonymy, and other semantic associations to form radial categories of meanings, as we see in detail in the case of the prefix *raz-*. The meanings of Czech derivational suffixes are somewhat more abstract; they are based on metonymy patterns most of which are parallel to those observed in lexical metonymy. A given polysemous suffix may be associated with as many as 16 metonymy patterns; and these patterns form structured relations with one another, yielding coherent networks of meanings for each suffix.

A systemic approach to the meanings of affixes gives us an enhanced appreciation of the extent and variety of their polysemy. This type of study could be taken one step further by examining systems across a number of languages, yielding typological observations similar to those found in the typology of lexical semantics (cf. Rakhilina and Reznikova 2013).

Another promising venue is to apply corpus linguistic techniques to the topic of the polysemy of affixes. For example, Efthymiou et al. (2015) have used data on corpus frequency to probe the polysemy of the Modern Greek prefix *para-*. Data on the relative frequencies of the various meanings of polysemous affixes, especially when coupled with the frequencies of affixes, could give us a better picture of which patterns are most common, both within and across languages.

<XREF>SEE ALSO: morphcom028; morphcom045; morphcom051; morphcom075.

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<TC>Table 1<quadsp>Russian perfectivizing prefixes with their path meanings and other related meanings.

Prefix	Prototypical path meaning with example of *-j-ti* 'walk'	Other meanings related to the prototypical path meaning	Example to illustrate one of the related meanings
do-	REACH THE END *do-j-ti* 'reach a place on foot'	EXCESS, ADD	*li-t'* 'pour' > ADD > *do-li-t'* 'add by pouring'
iz-	OUT OF A CONTAINER *izo-j-ti* 'emanate from'	EMPTY A CONTAINER, EXHAUSTIVE RESULT, EXHAUST A SURFACE, NEGATIVE EXHAUSTION, MAKE OUT OF, DECLINE/DEVIATE, ACQUIRE	*pisa-t'* 'write' > EXHAUST A SURFACE > *is-pisa-t'* 'fill up with writing'
na-	SURFACE *na-j-ti* 'come upon, find'	ACCUMULATE	*greši-t'* 'sin' > ACCUMULATE > *na-greši-t'* 'do a lot of sinning'
o(b)-	AROUND *obo-j-ti* 'walk around, avoid'	PASS, OVERDO, MISTAKE, AFFECT MANY, AFFECT A SURFACE, ENVELOP, IMPOSE/ACQUIRE A NEW FEATURE	*ledene-t'* 'freeze to ice' > AFFECT A SURFACE > *ob-ledene-t'* 'become covered with ice'
ot-	DEPART *oto-j-ti* 'walk away from'	BOUNCE, UNSTICK, REMOVE, MAKE NON-FUNCTIONAL, STOP AT THE ENDPOINT	*lete-t'* 'fly' > BOUNCE > *ot-lete-t'* 'bounce back'
pere-	TRANSFER *pere-j-ti* 'walk across'	SUPERIORITY, OVERDO, REDO, DURATION/OVERCOME, BRIDGE, TURN OVER, MIX, DIVIDE, SERIATIM, THOROUGH	*kriča-t'* 'shout' > SUPERIORITY > *pere-kriča-t'* 'outshout'
po-	SET OUT *po-j-ti* 'set out on foot'	RESULT, SOME, DISTRIBUTE	*čita-t'* 'read' > SOME > *po-čita-t'* 'read for a while'
pod-	APPLY TO BOTTOM *podo-j-ti* 'walk up to'	HORIZONTAL APPROACH, ADJUST, INCREMENT, SECRETLY, MINIMAL	*dela-t'* 'do' > SECRETLY > *pod-dela-t'* 'forge'
pri-	ARRIVE *pri-j-ti* 'arrive on foot'	ATTACH, ADD, ATTENUATE	*ši-t'* 'sew' > ATTACH > *pri-ši-t'* 'sew on'
pro-	THROUGH *pro-j-ti* 'walk through'	THOROUGH, DURATION, DISTANCE, PASS	*plaka-t'* 'weep' > > *pro-plaka-t'* 'weep all through a period of time'
raz-	APART *razo-j-ti-s'* 'walk away in different directions'	CRUSH, SPREAD, SWELL, DISSOLVE, EXCITEMENT, UN-	See examples (3)–(20)
s-	DOWN	TOGETHER, ONCE	*glupi-t'* 'act stupid' > ONCE

	so-j-ti 'walk down'		> *s-glupi-t'* 'do one stupid thing'
u-	MOVE AWAY *u-j-ti* 'leave on foot'	MOVE DOWNWARDS, CONTROL, REDUCE, HARM, PERCEIVE, PLACE/FIT, KEEP/SAVE, COVER COMPLETELY, DEPART FROM NORM	*govori-t'* 'speak' > CONTROL > *u-govori-t'* 'persuade'
v-	INTO *vo-j-ti* 'enter'		
v(o)z-	MOVE UPWARD *vzo-j-ti* 'ascend'	AGITATE, RESIST, REBUILD	*razi-t'* 'strike' > RESIST > *voz-razi-t'* 'object to'
vy-	OUT OF A CONTAINER *vy-j-ti* 'exit'	EMPTY A CONTAINER, EXHAUSTIVE RESULT, EXHAUST A SURFACE, NEGATIVE EXHAUSTION, CREATE AN IMAGE ON A SURFACE, MAKE OUT OF, DECLINE/DEVIATE, ACQUIRE, ENDURE	*stoja-t'* 'stand' > ENDURE > *vy-stoja-t'* 'hold out'
za-	DEFLECT *za-j-ti* 'stop by on one's way'	EXCESS, BEGIN, EXCHANGE, ATTACHMENT, COVER, FILL, CHANGE TO A FIXED STATE	*govori-t'* 'speak' > BEGIN > *za-govori-t'* 'begin to speak'

<TC>Table 2<quadsp>Prefixed perfective verbs with *raz-* from examples (3)–(20), highlighting semantic relations between the meanings of the prefix and the meanings of the verbs.

Type of semantic relationship	Example #	Imperfective simplex verb (infinitive form)	Prefixed perfective verb (infinitive form)
Strong overlap	(3)	*poro-t'* 'rip apart along seams'	*ras-poro-t'* [APART.PFV-rip.along.seams-INF] 'rip apart along seams'
	(11)	*vetvi-t'-sja* 'branch out'	*raz-vetvi-t'-sja* [SPREAD.PFV-branch.out-INF-REFL] 'branch out'
	(13)	*puxnu-t'* 'swell'	*ras-puxnu-t'* [SWELL.PFV-swell-INF] 'swell'
	(15)	*taja-t'* 'melt'	*ras-taja-t'* [DISSOLVE.PFV-melt-INF] 'melt'
Compatibility	(8)	*topta-t'* 'stamp'	*ras-topta-t'* [CRUSH.PFV-stamp-INF] 'crush underfoot'
	(9)	*ruši-t'* 'destroy'	*raz-ruši-t'* [CRUSH.PFV-destroy-INF] 'destroy'
	(14)	*bogate-t'* 'get rich'	*raz-bogate-t'* [SWELL.PFV-rich.become-INF]

			'get really rich'
	(16)	*gre-t'* 'heat'	*razo-gre-t'* [EXCITEMENT.PFV-heat-INF] 'heat up'
	(17)	*plaka-t'* 'weep'	*ras-plaka-t'-sja* [EXCITEMENT.PFV-weep-INF-REFL] 'burst out crying'
Contrast	(4)	*vez-ti* 'convey'	*raz-vez-ti* [APART.PFV-convey-INF] 'deliver to various places by vehicle'
	(5)	*lete-t'* 'fly'	*raz-lete-t'-sja* [APART.PFV-fly-INF-RECP] 'fly apart in various directions'
	(6)	*šata-t'* 'shake'	*ras-šata-t'* [APART.PFV-shake-INF] 'shatter by shaking'
	(7)	*klanja-t'-sja* 'bow'	*ras-klanja-t'-sja* [APART.PFV-bow-INF-REFL] 'take a parting bow'
	(10)	*kata-t'* 'roll'	*ras-kata-t'* [SPREAD.PFV-roll-INF] 'spread by rolling out (dough)'
	(12)	*rabota-t'* 'work'	*raz-rabota-t'* [SPREAD.PFV-work-INF] 'work out, develop'
	(18)	*vjaza-t'* 'tie'	*raz-vjaza-t'* [UN.PFV-tie-INF] 'untie'
	(19)	*šifrova-t'* 'encode'	*ras-šifrova-t'* [UN.PFV-encode-INF] 'decode'
	(20)	*duma-t'* 'think'	*raz-duma-t'* [UN.PFV-think-INF] 'change one's mind'

<TC>Table 3<quadsp>Classificatory terms for sources and targets in suffixal metonymy patterns cited in Janda (2011), following Peirsman and Geeraerts (2006).

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

<TC>Table 4<quadsp>Sample of polysemous suffixes that derive Czech nouns.

Suffix	SOURCE FOR TARGET metonymy patterns	Example

-ař/-ář	(ACTION, INSTRUMENT, LOCATION, PATIENT, PRODUCT) FOR AGENT; CONTAINED FOR CONTAINER; GROUP FOR ENTITY; POSSESSED FOR POSSESSOR	*zub* 'tooth' n. > PATIENT FOR AGENT > *zub-ař* 'dentist'
-ák	(ACTION, INSTRUMENT, PATIENT) FOR AGENT; (CHARACTERISTIC, ENTITY, GROUP, MATERIAL, QUANTITY) FOR ENTITY; (ABSTRACTION, ENTITY) FOR LOCATION; ACTION FOR INSTRUMENT; LOCATION FOR LOCATED; PART FOR WHOLE	*žebra-t* 'beg' v. > ACTION FOR AGENT > *žebr-ák* 'beggar'
-dl-o	ACTION FOR (AGENT, GROUP, INSTRUMENT, LOCATION, MATERIAL, PART, PATIENT); STATE FOR LOCATION	*diva-t se* 'watch' v. > ACTION FOR LOCATION > *diva-dl-o* 'theater'
-ec	(ACTION, PATIENT) FOR AGENT; CHARACTERISTIC FOR ENTITY; ACTION FOR INSTRUMENT; LOCATION FOR LOCATED	*blb-ý* 'stupid' adj. > CHARACTERISTIC FOR ENTITY > *blb-ec* 'fool'
-ek	(CHARACTERISTIC, LOCATION) FOR PART; ENTITY FOR EVENT, ACTION FOR PRODUCT; QUANTITY FOR TIME	*svat-ý* 'saint' n./adj. > ENTITY FOR EVENT > *svát-ek* 'holiday'
-enk-a	ACTION FOR ABSTRACTION; CONTAINED FOR CONTAINER; CHARACTERISTIC FOR ENTITY; ACTION FOR INSTRUMENT; LOCATION FOR LOCATED	*mysli-t* 'think' v. > ACTION FOR ABSTRACTION > *myšl-enk-a* 'idea'
-ik/-ík	(ABSTRACTION, CHARACTERISTIC, GROUP) FOR ENTITY; PRODUCT FOR AGENT; ACTION FOR INSTRUMENT	*budi-t* 'wake' v. > ACTION FOR INSTRUMENT > *bud-ík* 'alarm clock'
-ic-e	(CHARACTERISTIC, ENTITY, MATERIAL) FOR ENTITY; (CHARACTERISTIC, LOCATED) FOR LOCATION; QUANTITY FOR GROUP; LOCATION FOR LOCATED; CHARACTERISTIC FOR MATERIAL; PART FOR WHOLE	*víno* 'grapes' n. > LOCATED FOR LOCATION > *vin-ic-e* 'vineyard'
-in-a	(ACTION, ENTITY, LOCATION, MATERIAL) FOR ABSTRACTION; CHARACTERISTIC FOR (ENTITY, GROUP, LOCATION, MATERIAL); ACTION FOR (PATIENT, PRODUCT); (QUANTITY, WHOLE) FOR PART; QUANTITY FOR EVENT; ENTITY FOR GROUP; LOCATED FOR LOCATION; ENTITY FOR MATERIAL	*šest* 'six' num. > QUANTITY FOR PART > *šest-in-a* 'one sixth'
-išt-ě	(ABSTRACTION, ACTION, CHARACTERISTIC, LOCATED, PRODUCT) FOR LOCATION; WHOLE FOR PART	*parkova-t* 'park' v. > ACTION FOR LOCATION > *parkov-išt-ě* 'parking lot'
-k-a	(CHARACTERISTIC, MATERIAL) FOR ABSTRACTION; (CHARACTERISTIC, MATERIAL, QUANTITY) FOR ENTITY; ACTION FOR (EVENT, INSTRUMENT, PRODUCT, AGENT); QUANTITY FOR INSTRUMENT; PRODUCT FOR LOCATION; PART FOR WHOLE	*automobil* 'automobile' n. > PRODUCT FOR LOCATION > *automobil-k-a* 'car factory'
-n-a	(ABSTRACTION, ACTION, AGENT, LOCATED, PRODUCT) FOR LOCATION; ACTION FOR AGENT; CHARACTERISTIC FOR ENTITY	*ředi-tel* 'director' n. > AGENT FOR LOCATION > *ředi-tel-n-a* 'director's office'
-n-í	ACTION FOR (ABSTRACTION, LOCATION, MATERIAL, PATIENT,	*psá-t* 'write' v. > ACTION FOR PRODUCT > *psa-n-í* 'written

	PRODUCT); STATE FOR (ABSTRACTION, LOCATION)	document, letter'
-ník	(ACTION, INSTRUMENT, LOCATION, MATERIAL, PATIENT, PRODUCT) FOR AGENT; (ABSTRACTION, GROUP, MATERIAL, QUANTITY, ENTITY) FOR ENTITY; (ACTION, LOCATED) FOR LOCATION; LOCATION FOR LOCATED; ACTION FOR PART; CONTAINED FOR CONTAINER	See Table 5
-t-í	ACTION FOR (ABSTRACTION, EVENT, INSTRUMENT, PATIENT); CHANGE STATE FOR ABSTRACTION	*smés-t* 'sweep' v. > ACTION FOR PATIENT > *sme-t-í* 'trash'
-tk-o	ACTION FOR (INSTRUMENT, LOCATION, PATIENT, PRODUCT); STATE FOR LOCATION	*leha-t* 'lie' v. > STATE FOR LOCATION > *lehá-tk-o* 'lawn-chair'

<TC>Table 5<quadsp>SOURCE FOR TARGET associations between stems and words derived with the suffix *-ník* in Czech.

Source	Base and word class	Target	Word derived with *-ník*
ACTION	*pracova-t* 'work' v.	AGENT	*pracov-ník* 'worker'
INSTRUMENT	*soustruh* 'lathe' n.	AGENT	*soustruž-ník* 'lathe-worker'
LOCATION	*knihovn-a* 'library' n.	AGENT	*knihov-ník* 'librarian'
MATERIAL	*zlat-ý* 'gold' adj.	AGENT	*zlat-ník* 'goldsmith'
PATIENT	*papír* 'paper' n.	AGENT	*papír-ník* 'seller of paper goods'
PRODUCT	*kouzl-o* 'magic' n.	AGENT	*kouzel-ník* 'magician'
ABSTRACTION	*služb-a* 'service' n.	ENTITY	*služeb-ník* 'servant'
GROUP	*družstv-o* 'collective' n.	ENTITY	*družstev-ník* 'collective farmer'
MATERIAL	*pár-a* 'steam' n.	ENTITY	*par-ník* 'steamboat'
QUANTITY	*pět* 'five' num.	ENTITY	*pět-ník* '5 crown coin'
ENTITY	*střevíček* 'shoe' n.	ENTITY	*střevíč-ník* 'lady-slipper'
ACTION	*chodi-t* 'walk' v.	LOCATION	*chod-ník* 'sidewalk'
LOCATED	*ryb-a* 'fish' n.	LOCATION	*ryb-ník* 'fishpond'
LOCATION	*skál-a* 'cliff' n.	LOCATED	*skal-ník* 'cotoneaster'
CONTAINED	*čaj* 'tea' n.	CONTAINER	*čaj-ník* 'teapot'
ACTION	*narazi-t* 'collide' v.	PART	*náraz-ník* 'bumper'

<FC>Figure 1<quadsp>The radial category network of meanings of the Russian verbal prefix *raz-*.

<FC>Figure 2<quadsp>Metonymy patterns encoded by the Czech suffix *-ník*.