

Cognitive Linguistics (Cognitive Grammar)

Abstract

We outline some recent highlights in the application of cognitive linguistic theoretical and methodological approaches to the analysis of Slavic languages. A principal strength of cognitive linguistics is the way it focuses our attention on the continuous nature of linguistic phenomena. Rather than positing rigid categories and strict definitions, cognitive linguistics addresses the messy realities of language, facilitating the extraction of coherent patterns from the noise of human communication. We follow a thematic arrangement motivated by the types of variation we observe in language and the analyses proposed by Slavic linguists. These include variation across meaning and form, across modalities, and across time and speakers.

1. Introduction: The Slavic World from the Perspective of Cognitive Linguistics

Roman Jakobson once stated that “the true difference between languages is not in what may or may not be expressed but in what must or must not be conveyed by the speakers” (Jakobson 1959/1971: 492). In other words, while it is possible to express the things that human beings want to communicate in all languages, languages differ widely in the categories that they require their speakers to pay consistent attention to. Slobin (1996) has proposed that the grammatical categories that a language requires its speakers to mark consistently can have some effect on what those speakers pay attention to, and this “thinking for speaking” hypothesis (in essence a milder form of the Sapir-Whorf hypothesis) has found support in numerous studies.

Cognitive linguistics has generally focused on analyzing the semantic categories that constitute the meanings of linguistic units (whether individual morphemes or constructions of syntactically independent elements, see below) and determine their patterns of usage. In this respect, it views language as a dynamic emergent structure that is better characterized by patterns and relationships among items than by distinctions. One prominent way in which cognitive linguistics models relative continuity is by means of radial category structures in which a prototypical member of a category is related to relatively less prototypical members.

Cognitive linguistics blossomed at the same time that vast materials for studying linguistic variation (electronic corpora) and the tools for analyzing such variation (statistical software) went through radical changes. Cognitive linguistics has played a special role as a theoretical framework that accounts for the variation found in linguistic data and supports the interpretation of statistical outcomes.

Cognitive linguistics is not reductionistic: it does not assume that there are minimal units of language that can be assembled via composition into larger units. The basic unit of language is a construction (Goldberg 2006), a “symbolic assembly” (Langacker 2013) consisting of a phonological pole and a semantic pole, but constructions can be of varying levels of complexity, from very small (word-internal) to large (discourse level).

In this article, we focus primarily on the effects of variation in the Slavic languages and how they have been analyzed by means of cognitive linguistics, focusing on variation in Slavic data and how it is accounted for in cognitive linguistics. This survey represents both works that are explicitly framed in terms of cognitive linguistics as well as those that are highly compatible with cognitive linguistics.

2. Variation across meaning and form

The nature of meaning plays a central role in cognitive linguistics, which can be opposed to structuralist and formalist approaches in that it focuses on the internal structure of meaning rather than on boundaries or supposedly invariant “features”. The meaning of a given linguistic expression, category (or other meaningful structure) is centered around a prototype, and extension relationships (often motivated by metaphor and metonymy) link to more peripheral members, forming a radial category. Membership in a radial category is scalar, as are the relationships among members. Radial categories have been used extensively in cognitive semantic analyses of a range of Slavic lexical and grammatical categories. We survey recent work on case and aspect, two of the most distinctive Slavic grammatical categories.

The posthumously collected works of Rudzka-Ostyn (Tabakowska 2000) trace some of the earliest analyses of this kind, focusing on the grammatical cases of Polish. Janda’s (1993) study on the meanings of the instrumental and dative cases in Czech and Russian took the indirect object use of the dative case as prototypical, with extensions entailing the absence of an accusative direct object (governed dative) and the absence of an agent (impersonal dative). The interpretation of the impersonal dative in Russian was further detailed by Fortuin (2000), and the Polish dative was examined by Dąbrowska (1997). This approach eventually expanded into full-scale analyses of all cases in both bare and prepositional uses in Czech and Russian (Janda 2002), textbooks for learners (Janda & Clancy 2002, 2006), and typological comparisons of case usage across Slavic which proposed a semantic map of case semantics for Russian, Polish, and Czech (Clancy 2006). Šarić (2008) focused on spatial concepts expressed by prepositions and directional bare dative case in Bosnian/Croatian/Serbian. Janda’s & Clancy’s case textbooks for Russian and Czech for learners demonstrate the value of a cognitive semantic approach in instructional materials.

Dickey (2000) applied basic principles of cognitive semantic analysis in a study of the variation in Slavic aspectual systems, organizing and analyzing the variation as the consequence of two conceptually contiguous categories, totality and temporal definiteness (i.e., uniqueness in time, cf. Leinonen [1982]). On the basis of a variety of usage patterns and constructions (habituals, statements of fact, the historical present, instructions, coincidence with the moment of speech, ingressivity, and verbal nouns), this study established a broad east-west division in Slavic aspect. Accordingly Slavic aspectual systems break down into a western group (Czech, Slovak, Sorbian, and Slovene) motivated by a prototype of totality (comparable to the count/mass distinction for nouns, an eastern group (Russian, Ukrainian, Belarusian and Bulgarian) motivated by a prototype of temporal definiteness (involving referential uniqueness and thus comparable to definiteness in nouns), and two transitional zones (B/C/S and Polish) that share both types of conceptualization.

The principles of cognitive linguistics have allowed linguists to recognize the parallels between the referential properties of nouns and verbs. Janda (2004) explores the metaphorical identification of perfective with the characteristics of solid objects (which are clearly bounded with definite shapes) vs. imperfective with fluid substances (which lack clear boundaries and inherent shapes). In Russian, for example, this metaphorical characterization is extended to domains of discourse (where imperfective “substances” form the background for perfective figures, or “objects”) and pragmatics (where in certain circumstances imperfective imperatives are more polite, like soft substances, than perfective imperatives, like hard objects).

Over the last couple of decades, Slavic cognitive linguistics has been at the forefront in a revival in the study of Slavic verbal prefixes. This can be traced back to

Janda (1986), which interpreted the meanings of four Russian verbal prefixes that shared the meaning of EXCESS (*pere-*, *za-*, *do-*, and *ot-*) as coherent networks. The ensuing interest in the functions of Slavic prefixes occurred naturally in cognitive linguistics, which recognizes that the division between grammar and lexicon is basically arbitrary and in any case a fluid one. Shull (2003) combined cognitive semantics and video experiments to analyze differences between the Russian and Czech systems of prefixation. Dickey and Hutcheson (2003) and Dickey (2005, 2007) have analyzed the function of *po-* and *s-/z-*. Šarić (2014) presents cognitive analyses of prepositions and prefixes in Bosnian/Croatian/Serbian. Kuznetsova (2015:Chapter 4) has elaborated on the notion of prototypicality with an analysis of the Russian prefix *pri-*. Ultimately Janda and colleagues returned to the issue with radial category analyses of all Russian prefixes that can be used to form Natural Perfectives (of the type *na-pisat'* 'write', *s-varit'* 'cook'). They propose that aspectual prefixes in Russian, and in Slavic in general, behave as a verb classifier system analogous to numeral classifiers, which likewise show polysemy describable in terms of radial categories (Janda et al. 2013). Dickey & Janda (2015) have taken this line of research one step further by detailing typological parallels between numeral classifiers and all types of prefixed perfective verbs across the Slavic language family.

Slavic lexical items and semantic fields have been analyzed from a cognitive linguistics perspective. For example, Rakhilina 2000, Majsak & Rakhilina 2007) has made numerous contributions with analyses of the metaphorical behaviors of groups of lexemes in Russian, for example adjectives of size, temperature and color; body parts, body positions; manner of motion; and bodily experiences such as pain. Rakhilina and colleagues have fleshed out numerous metaphors that make up the "russkaja jazykovaja kartina mira" (see also Šmelev 2002 and Zaliznjak et al. 2005). And similar studies have also been undertaken for other Slavic languages, most notably Będkowska-Kopczyk (2004) has investigated negative emotions in Slovene.

Near-synonymy is another topic that involves the structure of meaning, and cognitive linguists have concerned themselves with questions about how various factors influence the choice among synonyms. Janda & Solovyev (2009) analyzed corpus data for Russian synonyms for 'sadness' and 'happiness', identifying their "constructional profiles", namely the statistical distribution of case marking on the noun and the presence (or absence) of prepositions. While there were some overall similarities, they showed that each synonym had a unique constructional profile. For example, *grust'* 'sorrow' is most strongly attracted to the *s* + Inst construction, whereas *unynie* 'melancholy' is most attracted to the *v* + Acc construction.

In an ambitious study combining corpus data with experimental methods, Divjak (2010) investigated the relationships among nine Russian verbs meaning 'try'. Divjak's statistical analysis showed that it is possible to discriminate among near synonyms, and that the strongest predictors for the choice of one synonym over another were the tense, aspect, and mood marking on the finite verb and infinitive, followed by semantic properties of the subject and infinitive event. These findings are at variance with both the lexicographic and psycholinguistic traditions and suggest that native speakers use distributional cues to develop a prototype, and also that groups of semantically similar words are clustered in the minds of speakers.

While in general phonology has been underrepresented in cognitive linguistics, Nessel (2008) has gone a long way to fill this void with a theoretical account of morphophonological alternations in the Russian verb stem. Nessel introduces "second-order schemas" as a means for modeling relationships between surface forms without recourse to underlying representations or ad-hoc rules. These

schemas make it possible to model the relationships among paradigm forms such as: the relationship between the 3pl present and present active participle forms and the relationship between past tense and infinitive. Nessel ultimately argues that form itself has meaning, that for example the truncation and softening alternations in Russian are markers of non-past meaning.

Schematicity is a central concept in Fidler's (2014) work on onomatopoeia in Czech. Based on corpus data, Fidler examines the intricacies of the form-meaning relationship at the level of the sounds themselves. She challenges the traditional assumption that sound and meaning are independent, suggesting that arbitrariness resides instead in the ways in which individual languages connect the two. For example, the onset labial stop *p-* can be viewed as a complex articulatory gesture with many components, including "the process of building up the airstream behind the obstruction before rupture, the incapacity of the obstruction to hold the buildup, the instantaneity of the release of the air, the power of the released air, the speed of the air" (Fidler 2014: 178). Czech happens to focus on the building up of pressure in this gesture, and thus associates it with bursting sounds and motions, such as *pif*, *paf* (the sound of bullets being fired), *plask*, *plesk* (the sound of hard objects hitting water), and *prásk* (the sound of something breaking apart upon impact). This particular phonosemantic association is just one option; other languages can focus on other parts of the articulatory gesture. Fidler argues that the relationship of sounds to meaning in onomatopoeia extends beyond iconic metaphors based on articulatory gestures, reaching also into grammatical categories such as aspect and serving as discourse markers.

The distribution of forms in corpora is meaningful as well, a fact accounted for in various studies based on behavioral profiling. Janda & Lyashevskaya (2011) found that the distribution of Russian verb forms according to subparadigms (nonpast, past, infinitive, imperative) was distinct for perfective as opposed to imperfective aspect and that this distinction was independent of aspectual morphological markers (prefixes vs. suffixes). Kuznetsova (2015) challenged the Maslov (1984) criterion for identifying Russian aspectual pairs by substitution of partner verbs in the same grammatical constructions using corpus data and demonstrated that supposedly "paired" verbs vary greatly in the number and frequency of grammatical constructions that they share. Eckhoff & Janda (2014) used variation in distribution of Old Church Slavonic verb forms to show that it is indeed possible to sort verbs according to aspect already in the earliest Slavic texts, suggesting an early provenience for perfective vs. imperfective verbs.

Say (2013) investigates the use of the dative case to mark experiencers as opposed to null marking or other markings (such as *dlja* 'for'). Say discovers a hierarchy for the co-occurrence of dative NPs denoting sentient participants such that predicatives are prototypical, and there is decreasing compatibility with related short-form adjectives and even less with long-form adjectives. Say puts forward a product-oriented schema according to which the constructional pattern is "blind" to the argument structure of the corresponding adjective, and constructional meaning prevails, either demoting or coercing the experiencer to the dative slot.

The study of patterns of variation in both meaning and form yield opportunities to find coherent regularities that otherwise might go unnoticed. For example, allomorphy is traditionally invoked only when the meaning of two (or more) forms is "identical", the forms are related (usually sharing the same etymology), and they are complementarily distributed. This strict definition excludes many significant relationships among linguistic expressions that are worthy of attention, but involve

meanings that are extremely close (but not identical) and/or forms that are unrelated. Dickey and Janda (2009) discovered a robust relationship between the semelfactive uses of the Russian *-nu* suffix and *s-* prefix as in *čixnut* ‘sneeze once’ and *sglupit* ‘do one stupid thing’. It turns out that the distribution of these morphemes is largely, but not entirely, predictable based on the morphological classes of the verbs they attach to. Since the distribution is not complementary (there is some overlap), it would not be possible to invoke allomorphy in the strict sense, however the behavior of these two morphemes closely approaches allomorphy and deserves notice. The study of such non-standard allomorphy has been further extended to other Russian prefixes in two dissertations. Makarova (2014) explores the attenuative/diminutive meanings of Russian *pri-* and *pod-* as cases of semantic overlap at the peripheries of their radial categories. Endresen (2014) investigates the range of possibilities, from prototypical allomorphy in the case of *raz-* vs. *ras-* and standard allomorphy in the case of *raz-* vs. *razo-*, through non-standard allomorphy in cases like *s-* vs. *so-*, to cases of non-allomorphy like *o(b)-* vs. *u-*. Together, these works show that traditional allomorphy only skims the surface of a host of significant relationships among forms that share meanings in language.

3. Variation across modalities

A major landmark in investigation of spoken Russian is the corpus and analysis offered in Kibrik and Podlesskaja 2009. They collected children’s narrations of their dreams and annotated them for prosodic features, such as tone, accent, loudness, tempo, and pauses. They found that the basic unit of spoken Russian is an “elementary discourse unit” (EDU) that can be identified on the basis of prosody. The prototypical EDU contains 2-5 words and corresponds to a clause. However, over 30% of EDUs deviate from this prototype, and most of the non-prototypical EDUs are shorter. Some subclausal EDUs serve discourse functions (consisting of discourse markers, or undergoing truncation when the speaker feels a need to restart), however, most of these “small” EDUs have other functions, namely they repeat information, elaborate on it, or simply divide up a complex clause into more convenient portions. It is precisely the subclausal EDUs that escape notice in linguistic analyses of the written modality, where they are underrepresented or altogether absent. Ultimately Kibrik and Podlesskaja find that the sentence is harder to define in spoken discourse, since it depends also upon the prosodic habits of individual speakers, but that the sentence is also less relevant, since it serves only at an intermediate level of organization, between the EDU and discourse episode.

While relatively little has been published to date on the use of co-speech gestures in Slavic (some exceptions are Grigor’eva et al. 2001, Antas 2001 and Załazińska 2001), promising research is underway, particularly in Moscow. Kibrik (2010) undertook an experiment comparing the amount of information conveyed by three different modalities: segmental (verbal) signals, prosodic signals, and visual signals (gesture and other visible cues). Kibrik’s conclusion is that the participants who had access to verbal information fared best on comprehension tasks, and the various channels of communication are not merely additive, but also interact with each other and deserve much more study.

4. Variation across time and speakers

Synchronically, speakers belong to different communities or different subgroups within their communities. Of course languages also change over time, both with

respect to individual speakers, who acquire their languages as they mature, and with respect to entire communities, whose languages gradually change.

Arkad'ev (2015) undertakes an areal typology of verbal prefixation, examining a variety of factors across both Slavic and Caucasian languages. Arkad'ev investigates both the relationships among languages and the relationships among factors and posits two prototypes for the behavior of verbal prefixes (which he terms "preverbs"): a Slavic prototype in which it is possible to affix multiple prefixes, prefixes do not express deictic relationships, there is secondary imperfectivization, and perfective verbs cannot be combined with phasal verbs and cannot express durativity vs. a Caucasian prototype with the opposite characteristics. Within Slavic, Arkad'ev finds Slovene to be maximally similar to the other languages, forming together with Czech, Slovak, and Serbo-Croatian a core central European zone. This core zone has two near peripheries, one in the east consisting of Polish, Belarusian, Ukrainian and Russian, and one in the south encompassing Bulgarian and Macedonian. There are three possible causes for the areal phenomenon of perfectivizing preverbs: genetic relationships among languages, language contact, and universal typological tendencies.

A study of gender by Kuznetsova (2015: Chapter 3) was facilitated by the fact that Russian marks gender on past tense verb forms. Using data from over six million past tense forms (belonging to 8340 lemmas) found in the modern subcorpus (after 1950) of the Russian National Corpus, Kuznetsova calculated the gender ratio (feminine:male) for verbs (excluding neuter forms and also verbs that do not have human subjects). She found that a typical Russian verb has approximately three times as many male forms as female forms, with nearly half of the verbs having between two and four times as many male forms. At the extremes of the distribution, Kuznetsova examined in detail the 100 most male and 100 most female verbs according to the gender ratio. Gender stereotypes are borne out by the grammatical profiles of verbs, but there are also some surprises. It is perhaps no surprise that the most male verbs are associated with professional occupations (such as *načal'stvovat'* 'be the boss'), physical strength (such as *kovat'* 'forge'), and negatively evaluated behavior (such as *p'janstvovat'* 'drink heavily'). While some of the most female verbs are associated as we might expect with motherhood (such as *zaberemet'* 'get pregnant') and household tasks (such as *napeč'* 'bake'), Kuznetsova found in addition highly female verbs that refer to witchcraft (such as *nagadat'* 'tell fortunes') and to bird-like movements and sounds (such as *vyporxnut'* 'flit out' and *zaščebetat'* 'begin to twitter').

The acquisition of Russian aspect has been approached from the perspective of cognitive linguistics in a number of works by Stoll, beginning with her dissertation (Stoll 2001), however here we focus on just one article about how children sort perfective verbs from imperfective verbs. Stoll and Gries (2009) looked at the distribution of perfective vs. imperfective verbs across past vs. non-past tense in the speech of child learners of Russian as compared to their adult caregivers. They used the Cramer's V statistic to measure the association strength between tense and aspect (manifested as a preference of perfective verbs for past tense, but as a preference of imperfective verbs for non-past tense). Their finding was that whereas the speech of both children and adults shows this association, it is considerably more marked in the speech of children, who are initially very conservative and then gradually approach the norms of adults. In other words, the youngest children (ages 2-3) start out by using perfective verbs in the past tense and imperfective verbs in the non-past tense and then begin to loosen up this constraint.

Voejkova et al. (2015) also compare the language of children with that of adults, this time with respect to the use of adjectives. Their material is the spontaneous speech of children (age 1;5-3;0) with their families, which corresponds to the first year when children produce adjectives in Russian. Adjectives are of relatively low frequency and inherently rather abstract, since they implicitly require the comparison of a number of objects in order to arrive at a qualitative characteristic. It is thus no surprise that adjectives are typically learned later than nouns and verbs, and also unlike nouns and verbs, the understanding of adjectives does not precede their productive use by children. Voejkova and her team find that the input is adequate and plentiful, and furthermore that it is structured in a way that helps to establish the relevant cognitive categories. In that first year of adjective acquisition, the focus is on visible categories, such as: color (*belyj* ‘white’), size (*malen’kij* ‘small’), movement (*bystryj* ‘fast’), distance (*dalekij* ‘far’), and direction (*levyj* ‘left’). Adjectives for touch and taste are less evident, but tend to come in antonym pairs (*sladkij* ‘sweet’/ *kislyj* ‘sour’, *suxoj* ‘dry’/ *mokryj* ‘wet’). This pattern mirrors the cognitive development of children, with visual discrimination coming before discrimination in other senses. The acquisition of adjectives is strongly supported by context, familiarity with relevant objects and the use of qualitative questions (*Kakaja mašina?* ‘What kind of car is it?’).

of an ongoing change, namely. Kuznetsova and Nessel (Kuznetsova and Nessel 2015, Nessel and Kuznetsova 2015) examine the change in government from genitive to accusative for objects of verbs like *bojat’sja* ‘be afraid’ in Russian. They present both corpus data and an experiment that reveal the influence of various factors on this gradual language change, including: individuation of the object, grammatical voice, frequency, verb semantics, and register. Although the use of accusative is still relatively rare (under 10% for most verbs in the study), it was already evident in the mid 1800s and is still increasing, and this trend is strongest when the object is an animate noun or a proper noun (thus highly individuated) and in less restrictive registers (such as in newspapers). The construction grammar model enables the authors to represent the complex interplay of factors in this ongoing change.

5. Conclusion

In this discussion we have outlined what we consider to be some major contributions of cognitive linguistics to Slavic linguistics. These contributions stem in one way or another from the emphasis in cognitive linguistics on category structure (e.g., radial categories). This approach to the semantic meaning of grammatical and lexical categories has produced advances in our understanding of major Slavic grammatical categories, including case and aspect. Cognitive linguistics is particularly suited to the analysis of lexico-grammatical units such as prefixes, and it should come as no surprise that cognitive linguistics has taken a leading role in a revived study of prefixes over the last 30 years.

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