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The role of non-canonical subjects in the overall grammar of a language

A case study of Russian

Laura Janda and Dagmar Divjak

University of Tromsø / University of Sheffield

We offer a model of Russian core syntax in terms of a radial category network of constructions. The prototype corresponds to Langacker’s “canonical event model”, namely a prototypical transitive event, and more peripheral constructions are related to it via metaphor and metonymy. From this perspective we focus on non-canonical subjects marked in the dative case, highlighting the complex interaction of lexical items (verbs) with constructions, and building on our previous work on case and infinitives. We hypothesize that a speaker’s perception of cause may be influenced by the use of non-canonical subjects (in Russian) rather than canonical subjects (in English) and present the results of an experiment. We are unable to prove any conclusive effect, but show the importance and need for further testing.

1. Constructing an entire grammar: Theoretical background

An important premise of cognitive linguistics is that it is possible to explain linguistic phenomena in terms of general cognitive strategies (Langacker 1987: 12–13). These strategies include categorization in terms of radial categories, the abstraction of embodied experience as image schemas, metaphor, and metonymy (Feldman 2006). Turner (1996: 9) demonstrates how embodied experience makes it possible for us to recognize “small stories as involving objects and events” and to “form conceptual categories of objects and events”. These “small stories” are primarily “events in space: The wind blows clouds through the sky, a child throws a rock, a mother pours milk into a glass, a whale swims through the water” (Turner 1996: 13). Turner & Lakoff (1989, cf. also Lakoff 1993) show how the EVENTS ARE ACTIONS¹ metaphor

1. In Lakoff and Turner’s model, an event is merely something that happens, whereas an action necessarily has an agent that brings it about.

extends and abstracts the concepts of ACTORS, MOVEMENTS, and OBJECTS to produce the building-blocks of constructions: subjects, objects, verbs. The failure of a boulder to move, for example, is an event that does not have an agent. However, EVENTS ARE ACTIONS “imputes agency to something causally connected to the event” (Lakoff & Turner 1989:37), thus metaphorically creating agents in events that are otherwise agentless, as in *The boulder resisted all of our efforts to move it* where the boulder becomes the agent of the otherwise agentless event. As a result of EVENTS ARE ACTIONS, the repertoire of potential subjects, both canonical and non-canonical, is extended. The EVENTS ARE ACTIONS metaphor further organizes these elements in structures that yield transitive and intransitive and other types of constructions. Turner (1996: 145) directly identifies the constructions that result from projecting the structure of “small stories” onto grammar with the construction grammar proposed by Goldberg (1995). Turner (ibid.) furthermore claims that “[r]udimentary grammar is a repertoire of related grammatical constructions” and that “[t]he backbone of any language consists of grammatical constructions that arise by projection from basic abstract stories”. In other words, Turner asserts that the grammar of a language consists of a network of related grammatical constructions. Although Goldberg in places echoes this view,² she also admits that linguists working on construction grammar “have focused on idiomatic constructions” (Goldberg 2006: 14) rather than tackling the larger task of describing an entire grammar in terms of constructions. The only network of constructions Goldberg (2006: 166–182) presents herself consists of Subject-Auxiliary Inversion constructions in English, which form a small and peripheral subset of English grammar.

To summarize: construction grammar is predicated on the assumption that the constructions in a grammar are related to each other, forming a network akin to a radial category, but scholars have focused on specific idiomatic constructions or minor groups of constructions. No one has presented the grammar of a language in terms of a network of constructions. Part of the reason for this gap may be that so much of the work on construction grammar has focused on English, where the grammar is dependent on the ordering of elements, rather than being a more straightforward matter of elements and their combinations. It may be that a grammatical system based on word order is inherently harder to handle in the framework of construction grammar, but this issue goes beyond the scope of our article, which focuses on Russian rather than English. A highly inflected language, such as Russian, clearly marks elements in terms of their roles in a construction, relegating word order to pragmatic functions. The description of a grammar as a network of constructions may thus be easier to realize for a language like Russian

2. Cf. Goldberg (2006: 18) “the network of constructions captures our grammatical knowledge of language *in toto*” and (2006: 227) “our knowledge of linguistic constructions, like our knowledge generally, forms an integrated and motivated network”.

with transparent morphological patterns for word classes and inflectional endings that specify case for noun phrases and agreement for verbs. A language like Russian makes it possible to organize constructions according to the elements that they contain, without the added parameter of order and the ambiguities word order must solve in the face of a limited morphological system in a language like English. English is of course typologically unusual in this respect, as most languages have more inflection than English does. Thus a description of the grammar of Russian as a network of constructions is also probably more representative of how this potential of construction grammar can be realized.

Croft's typological model (2001) is non-reductionist and, unlike Goldberg's model, not idiom-biased, not restricting the notion "construction" to those with a readily identifiable, tangible meaning, e.g. the *let alone* construction. For Radical Construction Grammar, the "primitive construct" is the construction, a complex entity containing categories and relations that are defined by the constructions they appear in; they are not theoretical primitives. In other words, constructions are not derived from their parts, but instead the parts are derived from the constructions. Hence, the parts of a construction do not have an independent existence outside of the whole construction. Croft suggests that linguists abandon the assumption that syntactic structures are made up of primitive categories and relations. He explicitly claims that the grammatical description of any language should exclusively consist of an analysis of the constructions in that language and the network of relationships among them. These constructions or grammatical patterns of a language are aptly described by means of the distributional method (Croft 1999: 69–74). In the distributional method, constructions define categories, albeit not in the strict sense. What matters is "the semantic interpretation of a word in a particular grammatical construction. By examining the meanings of verbs in constructions, we can establish semantic classes of events and conceptual meanings of constructions" (Croft 1998: 91).

The representation of Russian (and potentially any other) grammar as a radial category of constructions yields added benefits. Speakers' knowledge of a language may well be organized by their knowledge of relations between (the meanings of) constructions (van den Eynde 1995: 116ff; Goldberg 1995: 67; Croft 2001: 25–29). Human beings have the capacity to construe a situation in alternate ways; hence, knowledge of one construction involves simultaneous knowledge of a complex network of constructions. Networks of constructions can be used to distinguish between the forms of a lexeme and to categorize verbs into (sub)classes, as Apresjan (1967) has shown for Russian, Eggermont and Melis (1992) have shown for French, Levin (1993) has shown for English, and Schøsler and Van Durme (1996) have shown for Danish. Within cognitive linguistics and especially within Construction Grammar approaches, both constructions and lexemes and, in fact, all linguistic units are considered form-meaning pairings that form larger sets or networks.

If both grammatical constructions and lexical elements are meaningful units, their meanings need to be compatible in order to yield felicitous combinations. Comparing the sets of constructions verbs can occur in then tells us something about the meaning components those verbs share. A network account also reveals a center-periphery structure based on a prototype that corresponds to Langacker's (1991: 285–286) “canonical event model”, the prototypical transitive event. From this structure it is possible to discover which constructions are more peripheral in the system, and these include impersonal constructions with non-canonical subjects. It is also possible to show how neighboring constructions in the network are related to each other and how they influence each other semantically. In many places we see that the transition between neighboring constructions is continuous rather than discrete. All of these points are illustrated in detail in Section 3.1.

2. Non-canonical subjects in the dative case in Russian

For the purposes of this article we define grammatical subjects as those subjects that are expressed by a nominative noun phrase that triggers verbal agreement, and this type of subject is most typically an agent. Under this definition, many sentences in Russian do not have a grammatical subject, and most of these sentences will use the neuter singular verb morphology as their “default” solution. However, many of the sentences that lack a grammatical subject do have a non-canonical subject. This is possible when subject functions are realized by either something that is not a noun phrase (we will see examples of infinitives and clauses that fill this role below), or is a noun phrase marked by another case, such as the dative or accusative. This latter type of non-canonical subject is typically an experiencer and the potential agent of a further action.

Construction grammar presents an unrealized potential: despite claims that it is in principle possible to describe the entire grammar of a language in terms of a network of basic constructions, no one has ever presented such a network for the grammar of a language. We take on this challenge and in Section 3.1 we present the network of basic grammatical constructions in Russian. This network includes a peripheral subset of impersonal constructions in which the dative case marks non-canonical subjects. The focus of Section 3.2 is a Russian construction in this subset that is composed of a dative noun phrase (tagged “D”), a finite impersonal verb, and an infinitive form (“INF”). Examples (1a) and (2a) share this dative impersonal construction (underlined):³

3. Examples 1 and 2 also contain glosses for various cases: N = nominative, A = accusative, G = genitive, L = locative.

- (1) a. *Nam nadoelo tratit' vremja i sily,*
 Us-D bored waste-INF time and energy-A
čtoby dokazyvat' očevidnye... vešči.
 in-order prove-INF obvious things-A
 'We got bored with wasting time and energy to prove obvious things.'
- b. *Nam nadoela èta situacija/utrata vremeni i sily.*
 Us-D bored this situation/loss-N time-G and energy-G
 'We got bored with this situation/the loss of time and energy.'
- (2) a. *Xorošo by zadumat'sja ob ètom do togo,*
 Good would think-INF about this-L before that-G
kak vam dejstvitel'no ponadobitsja pokazat'sja vraču.
 how you-D really needs show-self-INF doctor-F
 'It would be good to think about this before you really need to go and see a doctor.'
- b. **Vam ponadobitsja vrač.*
 You-D needs doctor-N
 '*To you will be needed doctor.'

Though the structures in (1a) and (2a) look the same, they do not behave in entirely the same way: the finite verbs they contain have distinct properties. Examples like these differ in the degree of integration of finite and infinitive verbs, the status of the infinitive (whether or not it functions as a grammatical subject), and the status of the dative (whether or not it functions as a semantic subject). These differences correspond to the existence vs. non-existence of related constructions, as in (1b), where we see that the verb *nadoest'* 'bore' can have a nominative subject, whereas *ponadobit'sja* 'need' cannot. In other words, relationships to other constructions are crucial in determining how different verbs behave in this construction. An elicitation test showed that speakers agree on which finite verbs behave like *nadoest'* 'bore' and which behave like *ponadobit'sja* 'need', making it possible to establish which verbs belong to each type.

Section 4 contrasts the Russian dative impersonal constructions examined in Section 3.2 with their translation equivalents in English, which consist of personal constructions. A questionnaire was used to probe whether there is a difference between Russian and English perception of the causes motivating situations that are described using impersonal constructions in Russian, but personal constructions in English. We did not find any significant difference between Russian and English respondents. It may be the case that although the grammatical constructions in the two languages are different, the "thinking for speaking" (Slobin 1996) involved is not different enough to be measured, at least not by this kind of test.

3. The place of non-canonical subjects in the grammar of Russian

Grammatical case plays a pivotal role in Russian syntax. A brief characterization of each of the six grammatical cases is presented here, focusing only on relevant uses; for a fuller description see Janda & Clancy (2002). The nominative case typically marks grammatical subjects, the accusative marks the direct object, the dative marks the indirect object, and the instrumental marks instruments. However, some verbs govern the dative or instrumental, marking their objects with those cases instead of the accusative. Additionally, the accusative, dative, and instrumental can be used with various prepositions and in adverbials such as time expressions. The genitive case is primarily used adnominally and with prepositions, but there are verbs that govern this case as well. The locative case is used only with prepositions.

3.1 The network of basic constructions in Russian

We present a major portion of Russian grammar as a network of grammatical constructions depicted in Figure 1, which we invite the reader to compare with the diagrams presented by Kyröläinen in the previous chapter in this volume.

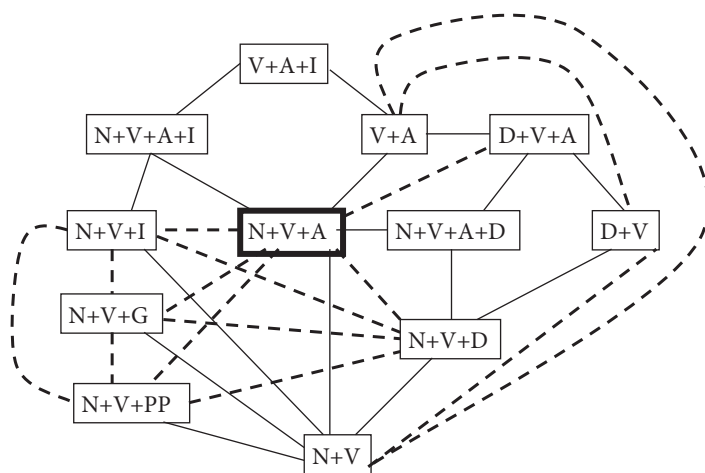


Figure 1. The basic grammatical constructions of Russian as a radial category.

The network in Figure 1 is mostly limited to active indicative finite clauses, though in places it overlaps with passive and non-finite constructions as well as with constructions in other moods. Still, it represents the basic constructions that constitute a core portion of Russian grammar, centered around the basic transitive

construction ($N + V + A$ in the figure), as illustrated in Example (3) (all other constructions in this network are illustrated with examples below).

- (3) *Ženščina šila kostjum.*
 Woman-N sewed suit-A
 ‘The woman sewed a suit.’

The elements in the constructions are verbs (V), noun phrases marked in the nominative (N), accusative (A), dative (D), instrumental (I), or genitive (G) case, or prepositional phrases (PP). Though the elements are presented in linear order (such as $N + V + A$) in Figure 1, the actual order is variable; only the combination of elements is crucial.

We see two kinds of relationships in Figure 1: ones that we term “metonymical”, and ones that we term “metaphorical”.

The solid lines show relationships where there is one more/less element in the neighboring construction. For example, a solid line connects the $N + V + A$ construction with the neighboring $N + V + A + D$ construction, since the latter construction has one more element (“D”, a dative-marked noun phrase) than the former one. The solid lines thus show extensions via metonymy, since some constructions are parts of other, larger constructions. We consider this relationship to be metonymical because the patterns that are affected by it show a part-whole relationship, although alternatively one could also interpret this as a relationship of schematicity in which the “extra” element in the larger construction is an optional part that may or may not be added to the simpler construction. The dotted lines indicate relationships where one element appears instead of another one. For example, a dotted line connects the $N + V + A$ construction with the neighboring $N + V + I$ construction because the two differ in the presence of an accusative noun phrase in the former as opposed to an instrumental noun phrase in the latter. The dotted lines thus show extensions via metaphor, where a structure with one element is mapped to a structure with a different element. Alternatively this relationship can also be interpreted as an alternation between two different cases.⁴ The $N + V + A + D$ construction and the $N + V + I$ construction are illustrated in Examples (4) and (5).

4. Technically it would be possible to put a dotted line between $N + V + A + I$ and $N + V + A + D$. However, whereas it is possible to find examples that show a semantic relationship between all of the relationships that have dotted lines in Figure 1, we have not been able to discover relevant examples for $N + V + A + I$ and $N + V + A + D$. In other words, for all of the dotted lines in Figure 1, we can show examples where closely synonymous meanings are involved in the linked constructions (cf. Examples (15)–(17) below), but this is not the case for $N + V + A + I$ and $N + V + A + D$.

- (4) *Ženščina šila mužu kostjum.*
 Woman-N sewed husband-D suit-A
 ‘The woman sewed a suit for her husband.’
- (5) *Ženščina xlopnula dver’ju.*
 Woman-N slammed door-I
 ‘The woman slammed the door.’

The remaining constructions depicted in Figure 1 are illustrated in Examples (6) through (14), beginning with the v + A construction and proceeding clockwise around the periphery of the figure.

- (6) V + A: *Ženščinu tošnilo.*
 Woman-A nauseated
 ‘The woman felt nauseated.’
- (7) D + V + A: *Gde nam iskat’ pravdu?*
 Where us-D seek-INF truth-A
 ‘Where can we look for the truth?’
- (8) D + V: *Ženščine nadoelo rabotat’.*
 Woman-D bored work-INF
 ‘The woman got bored of working.’
- (9) N + V + D: *Ženščina zaplatila advokatu.*
 Woman-N paid lawyer-D
 ‘The woman paid the lawyer.’
- (10) N + V: *Ženščina spala.*
 Woman-N slept
 ‘The woman slept.’
- (11) N + V + PP: *Ženščina rabotala v kabinetu.*
 Woman-N worked in office-L
 ‘The woman worked in the office.’
- (12) N + V + G: *Ženščina izbegala neprijatnostej.*
 Woman-N avoided unpleasant-things-G
 ‘The woman avoided unpleasant things.’
- (13) N + V + A + I: *Ženščina rezala rybu nožom.*
 Woman-N cut fish-A knife-I
 ‘The woman cut the fish with a knife.’
- (14) V + A + I: *Ženščinu ubilo tokom.*
 Woman-A killed electric-shock-I
 ‘The woman was killed by an electric shock.’

Figure 1 presents the core constructions of Russian, illustrated in Examples (3) through (14), as a radial category, centered around the $N+V+A$ construction, which we argue is prototypical. Note that the $V+A+I$ construction is quite parallel to the comitative, elative, and *läbi* ‘through’ constructions typical of non-volitional agents and inanimate actors as described by Lindström in her chapter in this volume. There are at least two reasons to consider $N+V+A$ construction the prototype for this network. One reason is semantic, in that this construction instantiates Langacker’s (1991: 285–286) “canonical event model”, the most salient type of event. The other reason has to do with the structure of the network. A prototype is usually directly connected to more subcategories than any other subcategory (Lakoff 1987; Geeraerts 1995; Croft & Cruse 2004; and Lewandowska-Tomaszczyk 2007). As we see in Figure 1, the $N+V+A$ construction has more direct connections to the remaining constructions than any other construction: there are four links motivated by relations of addition/removal of participants (solid lines = metonymic), and five links motivated by substitution of participants (dotted lines = metaphorical), giving a total of eight links. The use of a thicker frame around $N+V+A$ symbolizes the prototypical status of this construction in the figure.

The primary focus of this article is the $D+V$ construction in (8). This construction is labelled “ $D+V+INF$ ” by Kyröläinen (in the previous chapter in this volume), and he finds the dative noun phrase in this construction to be very similar to a nominative subject. This construction is influenced by its mapping (metaphorical) relationship to $V+A$ and its metonymic relationship to $N+V+D$. However, before detailing these two relationships, it is necessary to understand the overall nature of the relationships between constructions in the radial network presented in Figure 1.

Although the network is drawn in terms of discrete nodes and the differences between the core constructions involve discrete syntactic changes (addition/removal or change of a participant), the relationships that connect the constructions have a continuous semantic nature. This is true of both the metaphorical and the metonymic relations in the radial category, as we have demonstrated in detail in Divjak & Janda (2008) and Janda (2008). Those arguments are summarized here.

Concerning the metaphorical transitions between $N+V+A$ and constructions with the same number of participants, but the genitive, dative, or instrumental case instead of the accusative, we find that often the same verb or a verb with a near-synonymous meaning can be found in parallel constructions. Examples (15a–b) illustrate the use of the same verb in both $N+V+A$ and $N+V+G$ constructions, and Examples (16a–b) and (17a–b) illustrate the use of near-synonyms in the $N+V+D$ and $N+V+I$ constructions. In all three instances, only subtle differences in construal are involved in the choice between the “a” and “b” examples.

- (15) a. $N+V+A$: *Žeňščina bojalas' smert'*.
 Woman-N feared death-A
 'The woman feared death.'
- b. $N+V+G$: *Žeňščina bojalas' smerti*.
 Woman-N feared death-G
 'The woman feared death.'
- (16) a. $N+V+A$: *Žeňščina soprovoždala muža*.
 Woman-N accompanied husband-A
 'The woman accompanied her husband.'
- b. $N+V+D$: *Žeňščina sopusťstvovala mužu*.
 Woman-N accompanied husband-D
 'The woman accompanied her husband.'
- (17) a. $N+V+A$: *Žeňščina brošala kamni*.
 Woman-N threw stones-A
 'The woman was throwing stones.'
- b. $N+V+I$: *Žeňščina brošalas' kamnjami*.
 Woman-N threw stones-I
 'The woman was throwing stones.'

'Death' in (15a) can refer to something more specific, definite, than in (15b), where it is potentially more general. (16a) is a more neutral statement in relation to (16b) which can imply that the woman submits herself to follow the path of her husband. (17a) is a statement about what happened to some stones, whereas in (17b) the stones are conceptualized more as an instrument for carrying out an act of throwing.

Of course there are also many verbs that show more disparate semantics, and the core meaning of each case is quite distinct. Overall, the accusative is the most neutral way to mark a patient in a transitive construction. The genitive is largely restricted to use with verbs describing approach or withdrawal; in (15b) *bojat'sja* 'fear' denotes an emotional withdrawal (Janda & Clancy 2002: 118). The dative appears with verbs denoting giving, communication, benefit, harm, submission, and matching; in (16b) *sopusťstvovat'* 'accompany' is an example of a verb denoting a matching action (Janda & Clancy 2002: 102). Some actions require the presence of an instrument under the agent's control, and *brošat'sja* 'throw' requires that something be thrown (Janda & Clancy 2002: 26). However, as Examples (15)–(17) show, there are areas of semantic contiguity in this sub-network of Russian syntax. All of these examples could be multiplied, and together they show that the metaphorical relationships between the $N+V+A$ construction and its neighbors are continuous, presenting language users with some nearly synonymous choices, despite discrete syntactic differences.

A similar continuum is established in the metonymic relationship between the $N + V + A$ construction and the $N + v$ construction by the fact that many transitive verbs can be used without overtly stating a direct object. In other words, transitive verbs often can be used in both constructions, as we see in Examples (18a–b).

- (18) a. $N + V + A$: *Žensčina šila kostjum.*
 Woman- N sewed suit- A
 ‘The woman sewed a suit.’
- b. $N + V$: *Žensčina šila.*
 Woman- N sewed
 ‘The woman sewed.’

The overt expression of the object is often optional, creating a continuum between the two constructions, and parallel examples could also be cited for the relation of the $N + v$ construction to the other constructions it has metonymic links to, namely $N + v + PP$, $N + v + G$, $N + v + I$, and $N + v + D$.

This article focuses on the $D + v$ construction (see Example (8) above), which, like all other constructions in the network, is influenced by its relationships to neighboring constructions. Here the most crucial links are the metaphorical one to the $v + A$ construction and the metonymic one to the $N + v + D$ construction, paralleled by the link between $v + A$ and $N + v + A$. Table 1 presents examples illustrating the parallels among these four constructions.

Table 1. The $v + D$ construction and its neighborhood.

	$N + v + D$	$v + D$	$v + A$	$N + v + A$
v can have N subject	<i>Žensčine nadoel muščina</i> [Woman- D bored man- N] ‘The man bored the woman’	<i>Žensčine nadoelo (rabotat’)</i> [Woman- D bored (work- INF)] ‘The woman got bored (of working)’	<i>Žensčinu trjaslo</i> [Woman- A shook] ‘The woman got shaken up’	<i>Žensčinu trjas muščina</i> [Woman- A shook man- N] ‘The man shook the woman’
v cannot have N subject	XXX	<i>Žensčine prišlos’ rabotat’</i> [Woman- D forced work] ‘The woman had to work’	<i>Žensčinu tošnilo</i> [Woman- A nauseated] ‘The woman felt nauseated’	XXX

The verbs in Table 1 describe situations of discomfort or compulsion, although verbs that describe good fortune and enjoyment can also be used to illustrate the relationships among these constructions. The first thing to notice in Table 1 is the mid portion of the table containing the $v + D$ and $v + A$ constructions and the two

examples that illustrate each construction. These are both impersonal constructions and they have contiguous, if not directly overlapping, semantics in that they involve situations that are beyond the control of the referent of the noun phrase (the woman), whether it is marked in the dative or the accusative. There is thus a continuum between these two constructions similar to the continua illustrated in Examples (15)–(17) above. Both the $v + D$ and the $v + A$ construction use the default neuter singular morphology on the verb (with *-o* desinence in the past tense) since they have no grammatical subject to agree with.

The second thing to notice in Table 1 is the presence of the infinitive verb form *rabotat* ‘work’ in the two examples of the $v + D$ construction. The infinitive expresses the action that the dative-marked noun phrase can be the subject of. In the construction with *nadoelo* ‘bored’, the infinitive is not obligatory, since it is possible to say just *Ženščine nadoelo* ‘The woman got bored’, making this construction parallel to the $v + A$ example *Ženščinu trjaslo* ‘The woman got shaken up’, except for the difference in case. It is often possible to have an infinitive verb form in the $v + D$ construction, but not in the $v + A$ construction; the experiment described in Section 4 focuses specifically on the $v + D$ construction with an infinitive.

We turn now to the left-most column in Table 1, labeled “ $N + v + D$ ”, and compare it with the column under “ $v + D$ ”. In addition to the optional presence of an infinitive in the $v + D$ construction, we note that some verbs in this construction can also appear in the $N + v + D$ construction with a nominative subject, whereas other verbs cannot appear in this construction. This distinction is represented by the two rows in Table 1: the first row, labeled “ v can have N subject” presents examples showing that the same verb, here *nadoest* ‘bore’, can appear in both constructions, and such verbs serve to metonymically link the two constructions since these verbs can appear in both the larger, full construction ($N + v + D$) and the reduced, partial construction ($v + D$). Note also that whereas the form *nadoelo* ‘bored’ in the $v + D$ construction shows the neuter singular *-o*, the form *nadoel* ‘bored’ in the $N + v + D$ construction is masculine singular, agreeing with the subject *mužčina* ‘man’. If we compare the rightmost two columns in Table 1, we find that the same metonymic link is observed also between the $v + A$ and $N + v + A$ constructions, where the verb *trjasti* ‘shake’ appears in both constructions, with the neuter singular form *trjaslo* ‘shook’ in the impersonal $v + A$ construction, but the masculine singular *trjas* ‘shook’ in the personal $N + v + A$ construction.

In the bottom row of Table 1, labeled “ v cannot have N subject”, we present examples of verbs that can only appear in impersonal constructions. These verbs cannot open a nominative slot. For the $v + D$ construction, *prišlos* ‘was forced to’ is such a verb and happens to require the presence of an infinitive, although some other verbs of this type do not require an infinitive (such as *povezlo* ‘got lucky’).

The v + A construction also has some verbs like *tošnit* ‘feel nauseated’ and *znobit* ‘feel cold’ that function exclusively in impersonal constructions.

We argue that the dative participant in the v + D construction is a non-canonical subject because (a) it is always a human experiencer and (b) in the presence of an infinitive, the dative participant identifies the agent of the action described by the infinitive. Returning to the v + D examples in Table 1, in both examples the woman is the experiencer of a situation of annoyance or compulsion and the woman is also the agent of the action named by *rabotat* ‘work’, since both examples assume that it is possible to say *Ženščina rabotaet* ‘The woman works’.

The remainder of this article focuses on verbs in the v + D construction with an accompanying infinitive form. This includes both verbs that can open a nominative slot and verbs that cannot do so. Both types of verbs are investigated in the experiment described in Section 4.

3.2 Two kinds of non-canonical subject status

This section presents a close examination of the v + D construction with an infinitive form. In these constructions, as demonstrated above, the dative participant is an experiencer, and thus a kind of non-canonical subject. We developed a test that was run on all verbs that can appear in this construction (Divjak & Janda 2008). The test makes it possible to distinguish which verbs can open a nominative slot and which cannot. Thanks to this test we were able to identify the two groups of verbs and further analyze their behavior. We show that if a verb can open a nominative slot, the infinitive occupies that slot in this construction, serving also as a kind of non-canonical subject. Verbs that cannot open a nominative slot have no grammatical subject at all, only the dative experiencer. We argue that there is also difference in the role of the dative participant: if the verb can open a nominative slot, the dative is a true experiencer, but if it cannot open a nominative, the dative is a more agentive experiencer.

In Examples (19a–c) we see that the verb *nadoest* ‘bore’ can have three kinds of subjects. In (19a) the noun *gosslužba* ‘civil service’ is the grammatical subject, appearing in the nominative case. Thus, as we saw above in Table 1, this verb can open a nominative slot. But this slot can also be filled with two other items, neither of which are noun phrases. In (19b) the infinitive form *tratit* ‘waste’ fills this slot, since it is wasting that causes or is the agent of boredom. This example illustrates the v + D construction with an infinitive form that we focus on here. (19c) shows that there is a third option, namely that an entire clause can fill this slot.⁵

5. Examples (19)–(22) are cited from the Russian National Corpus, together with the listing of the author, source, and date.

- (19) a. *Vy motivovali svoj uxod tem, čto*
 You-N motivated own departure-A that-I that
gosslužba nadoela.
 civil service-N bored
 ‘You motivated your departure by (saying) that civil service had become boring.’ [Svetlana Ofitova. Glavnaja zadača – oslablenie gosudartstva // “Nezavisimaja gazeta”, 2003. 04.09]
- b. *Nadoelo tratit’ vremja i sily,*
 Bored waste-INF time-A and energy-A
čtoby dokazyvat’ očevidnye ... vešči.
 in-order prove-INF obvious things-A
 ‘Wasting time and energy to prove obvious things has gotten boring.’
 [Vtoroj s”jezd // “Specnaz Rossii”, 2003.05.15]
- c. *Generalu nadoelo, čto gazety pišut*
 General-D bored that newspapers-N write
pro nego vsjakie domysly.
 about him-A various conjectures-A
 ‘The general got bored with the newspapers writing all kinds of conjectures about him.’ [Petr Akopov. Aušev dal kljatvu ne byt’ prezidentom // “Izvestija”, 2002.01.24]

We follow Browne (1987:166) in recognizing the infinitive form as a non-canonical subject: “[Subjects are] those noun phrases with which the verb agrees in person and number (in gender too, for some verb forms). Then we observe that an infinitive construction or a subordinate clause can play the same role as a noun phrase and is mutually exclusive with it; therefore we extend the term “subject” to these infinitive constructions or clauses, and mention in our description the special verb-agreement which they are associated with (3rd singular neuter)”.

By contrast, there are also verbs that appear in the *v + D* construction with an infinitive, but cannot open a nominative slot, such as those in Examples (20)–(21). Here we have no grammatical subject at all, only the dative. In Example (20), the dative-marked pronoun *Vam* ‘you’ identifies the agentive experiencer since the finite verb *ponadobitsja* ‘needs’ has no grammatical subject. This verb can open a nominative slot in its here intended sense but the infinitive *pokazat’sja* ‘show oneself’ cannot serve this role. The verb *nadležit* ‘requires’ in (21) also has the dative agentive experiencer *Vam* ‘you’, but does not open up a nominative slot hence the accompanying infinitive *vstretit’* ‘meet’ cannot serve as a subject.

- (20) *Xorošo by zadumat'sja ob ètom do togo,*
 Good would think-INF about this-L before that-G
kak vam dejstvitel'no ponadobitsja pokazat'sja vraču.
 how you-D really needs show-self-INF doctor-D
 'It would be good to think about this before you really need to go and see a doctor.'
- (21) *Vam nadležit' vstretit' ètu nuždu,*
 You-D requires meet-INF that need-A
nakormit' ètix golodnyx ljudej!
 feed-INF these hungry people-A
 'You have to meet that need, feed these hungry people!'
 [Antonij (Blum), mitropolit Surožskij. Čudo pjati xlebov i dvux rybok. (1980)]

There are eighty-one verbs in Russian that can appear in the *v + D* construction with an infinitive. However, there is no a priori way to know which of these verbs have an infinitive non-canonical subject and which ones do not. We designed an elicitation test for argument structure based on substitution with pronouns and infinitive phrases in order to distinguish the two types of verbs (Divjak & Janda 2008). Native speakers were presented with Russian phrases containing the structure finite verb + infinitive, such as *His parents decided to buy him a Mercedes*. They were then asked to form or rate phrases with the same finite and infinitive verbs with this structure: *What did his parents decide?; To buy him a Mercedes; To buy him a Mercedes, that's what they decided*. These phrases show whether it is possible, as in English, to substitute the infinitive form with a pronoun such as *what* or *that*. If this is possible, then the verb is of the type that opens a nominative slot and the infinitive occupies that slot. If this is not possible, the verb has no grammatical subject.

The experiment was set up as a small number design in which we worked with five native speakers of Russian, between the ages of twenty-five and fifty. They judged the constructional possibilities of these verbs on a three-point scale. Several measures were taken to minimize possible problems with this set-up. Native speakers were asked both to rate ready-made sentences and to form sentences using particular constructional devices; these sentences were on a later occasion presented to the participant who had constructed them as well as to other participants. To guard against lexical effects, the tests were carried out using pronouns and other pro-forms, which ensures that the mutual effect of lexical items in a construction is minimized. Moreover, to check for repetition effects in judgments of grammaticality ten control judgments were collected for every verb from other native speakers. In this experiment, the trigger questions were mixed with other, non-related questions about Russian syntax and semantics. The consistency in the answers was almost without exceptions.

Here are what the results looked like, starting first with infinitives that are used as a grammatical subject with a verb such as *nadoest* ‘bore’. In Examples (22a–c), the infinitive event, i.e. *čitat* ‘read’, can be substituted with the pronoun *čto* ‘what’. As we see in (22c), one can also use the infinitive *čitat* ‘read’ to answer the question posed in (22b); an alternative is a noun such as *čtenie* ‘reading’.

- (22) a. *Rebenku nadoelo čitat*.
 Child-D bored read-INF
 ‘Reading bored the child.’
 b. *Čto rebenku nadoelo?*
 What-N child-D bored
 ‘What bored the child?’
 c. *Čitat*. OR *Čtenie*.
 Read-INF OR Reading-N
 ‘Reading.’

With this type of finite verb there is a nominative slot, and the infinitive *čitat* ‘read’ fits into the nominative slot. This makes the infinitive a subject, although not a prototypical subject. The dative slot, occupied by a person, is then free to take on its typical function, that of an experiencer. Reification (Langacker 1987) explains these facts: an infinitive event is reduced to and treated like any other “thing” (cf. Smith 1994) that can be the subject of the finite verb event and bring it about.

This substitution is possible for forty-four of the eighty-one finite verbs that are known to occur in the v + D construction with an infinitive. For the remaining thirty-seven finite verbs, the infinitive cannot fill the subject slot. In Example (23), we see that only a noun such as *lekarstvo* ‘medicine’ can appear in that slot.

- (23) a. *Bol'nomu ponadobitsja pokazat'sja vraču*.
 Patient-D needs show-self-INF doctor-D
 ‘The patient will need to go and see a doctor.’
 b. *Čto bol'nomu ponadobitsja?*
 What-N patient-D needs
 ‘What will the patient need?’
 c. **Pokazat'sja vraču*. VS *Lekarstvo*.
 Show-self-INF doctor-D VS Medicine-N
 ‘*To go and see a doctor.’ ‘Medicine.’

Some of the finite verbs that cannot open a nominative slot and do not tolerate the infinitive in that slot are morphologically defective, having forms only in the third person (neuter) singular. An example is given in (24), where we see that even the question with the pronoun (24b) is infelicitous, though this can be corrected by adding a pro-verb such as *sdelat* ‘do’ (24c):

- (24) a. *Vam nadležit javit'sja v ukazannyj srok.*
 You-D requires appear-INF in appointed time-A
 'You are required to appear at the appointed time.'
- b. **Čto vam nadležit?*
 What-N you-D requires
 '*What are you required?'
- c. *Čto vam nadležit sdelat'?*
 What-N you-D requires do-INF
 'What are you required to do?'

The infinitive phrases *pokazat'sja vraču* 'go and see a doctor' and *javit'sja v ukazannyj srok* 'appear at the appointed time' in (23) and (24) do not fit in the nominative slot occupied by *čto* 'what'. The finite verb does not function as construction kernel (semantically the main verb rather than one that serves an auxiliary function) (cf. Butler 1967). No reification is possible here: the infinitive events *go and see a doctor* or *appear at the appointed time* cannot be reduced to, or treated like any other "thing" that can be the subject of the finite verb event *need* or *require*. In other words, the infinitive event does not initiate the finite verb event. With these finite verbs, the infinitive is stronger than usual, and the finite verb needs the infinitive to carry the load of the construction. Here the role of the finite verb is similar to that of an auxiliary. The finite verb event modifies the infinite verb event and together the finite verb and the infinitive indicate a complex event. This status is claimed for modal verbs in general and fits the verbs that display this pattern as well. Among such finite verbs there are two major semantic groups: a group of non-implicative verbs that express modal-like concepts, and a group of implicative verbs that stress the result obtained. Some examples of these finite verbs are presented in (25):

- (25) a. Modality verbs:
 Volition: *xočetsja* 'feels like', *ne terpitsja* 'is impatient', *xvatit* 'is sufficient'
 Suitability: *goditsja* 'is suited for', *nadležit* 'requires',
polagaetsja 'is supposed to'
 Necessity: *trebuetsja* 'is needed', *predstoit* 'is in store for',
ostaetsja 'is necessary'
- b. Result verbs:
 Success: *udastsja* 'succeeds'
 Success + Associated (mis)fortune: *povezet* 'gets lucky',
posčastlivitsja 'is lucky'
 Success + Cause: *dovedetsja* 'gets the chance to', *slučitsja* 'happens'

When these finite verbs appear in the *v + D* construction with an infinitive, the infinitive defines the construction's kernel. The event expressed by the infinitive is the only one that can combine with a nominative (canonical) subject, as in Example (26). We label this subject a "True Agent":

- (26) *Bol'noj pokazalsja vraču.*
 Patient-N showed-self doctor-D
 'The patient went to see a doctor.'

The True Agent in (26) uses the same noun phrase as the one that appears in the dative case as a grammatical subject in (23a). In (23a) the finite verb cannot open a nominative slot, the infinitive cannot serve as a subject, and indeed there is no subject. The person named in the dative noun phrase is at once the experiencer of the finite verb + infinitive complex and the agent of the action named in the infinitive. We call this participant an "Agentive Experiencer".

The dative noun phrase in Example (22) is combined with a finite verb that does open a nominative slot. Here the infinitive does serve as a non-canonical subject, since it can be replaced with a nominative noun phrase. We call the dative noun phrase here a "True Experiencer". Overall, the three types of participants can be viewed as lying at different points along a continuum of agentivity, where the True Agent has the highest agentivity, the True Experiencer has the lowest agentivity, and the Agentive Experiencer is between the two extremes, as visualized in (27):

- (27) Scale of Agentivity
 True Agent > Agentive Experiencer > True Experiencer

This section focused on the impersonal verbs that appear in the v + D construction with an infinitive. Native speakers concur that forty-four finite verbs in this construction open a nominative slot, while thirty-seven do not. In combination with the finite verbs that open a nominative slot, the infinitive fills that slot and the dative participant is a True Experiencer. In combination with the finite verbs that do not open a nominative slot, the infinitive forms a complex event, and the finite verb behaves like an auxiliary. With these auxiliary-like finite verbs, the dative participant straddles two roles as a non-canonical subject, since it is at once the experiencer of the situation described by the finite verb and the initiator of the event named by the infinitive. This dative participant is an Agentive Experiencer. The next section presents an experiment comparing the inferences made by Russian speakers in response to sentences containing Agentive Experiencers and True Experiencers with the inferences made by English speakers who are confronted with True Agents in the translation equivalents.

4. A discourse-cohesion experiment⁶

Russian and English express agency differently. Russian has no modal verbs (except for *moč* ‘be able’), but abounds in impersonal constructions, e.g. *mne xolodno/48 let* [Me-D cold/48 years] ‘I’m cold/48 yrs old’. English by contrast has many modal verbs and favors personal subject-headed constructions. Often, Russian impersonal v + D constructions correspond to English personal constructions containing a finite verb that agrees with a (nominative) subject, as in *Mne xočetsja spat* [Me-D wants sleep-INF] ‘I feel like sleeping’. For the expression of experiences such as necessity, obligation, volition, suitability, and success Russian avoids employing personal constructions. English, on the contrary, lacks true impersonal constructions altogether. In other words, although the (nominative) subject typically fills the role of agent in both English and Russian, in English constructions expressing the above-mentioned experiences a grammatical subject is present, while Russian uses a non-canonical subject, namely an experiencer participant.

Does this grammatical difference influence the way speakers of Russian and English think about a situation? In particular, given an event that is an experience, do we see different results of the EVENTS ARE ACTIONS metaphor, identifying different items that can be attributed agent-like status? One might expect that speakers of English will be more likely to assign agency to the person that serves as the subject of the verb, whereas Russian speakers would be less likely to identify the dative-marked experiencers in equivalent phrases as the agents. Perhaps Russians will be more likely to choose a direct object or a circumstance as the cause? We designed an experiment to address these questions.

We used a questionnaire to probe whether speakers of Russian and English perceive a difference in discourse cohesion between causes motivating situations that are described using impersonal constructions in Russian, but personal constructions in English. Native speakers of the two languages were given trigger sentences that contained an impersonal v + D construction in Russian, but the translation equivalent in a personal construction in English. The participants were shown a trigger sentence and asked to decide whether a second sentence would be a good way to continue the narrative in the trigger sentence.

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Example (28) presents a token set from the experiment. (28a) is a trigger sentence expressed with an impersonal construction in Russian, but a personal construction in English (here only the English is presented). (28b–d) offer three alternative continuations for the narrative:

- (28) a. *I managed to read War and Peace*
 b. *I set all projects aside and only read for a whole week.*
 c. *The book was less boring than I had assumed.*
 d. *It rained all summer, which kept me at home.*

(28b–d) make different assertions about the cause for success stated in (28a). (28b) asserts that *I* succeeded because of something that *I* did. This alternative assigns agency to the referent of the pronoun *I*, which is also the nominative subject of the finite verb in (28a) in English, but in the Russian equivalent, this referent appears as a dative experiencer. (28c) gives a different interpretation, namely that the object, *the book*, is what made success possible. (28d) identifies an external factor, namely the weather, as the cause.

Given that the English trigger sentence presents the person experiencing success as an agent, one might expect English speakers to prefer (28b) with the same referent in the same canonical subject position. Russian marks the person who succeeds with the dative case in an impersonal construction; the success is grammatically presented as something that happens to that person, not something that they have brought about. Given this fact, one might expect Russian speakers to prefer (28c) or (28d), which assign the cause for success to the object or an external circumstance.

This experiment was implemented by means of a questionnaire containing pairs of sentences from token sets similar to Example (28), where the finite verb in the trigger sentence was an impersonal verb in a *v + D* construction in Russian, but a personal verb in English. The second sentence corresponded to (28b), (c), or (d). In Russian the questionnaire contained six verbs that do not open a nominative slot, where the dative is an Agentive Experiencer, plus six verbs that do open a nominative slot, where the dative is a True Experiencer. The twelve Russian verbs used in the questionnaire and their English equivalents are presented in (29):⁷

7. Note that many of these verbs are the same as those cited in (25). However in (25) all the verbs are cited in their third person present forms, whereas in (29) some of the same verbs are cited in their neuter singular past forms. These are the only two forms that are relevant since these verbs lack a full paradigm in the *v + D* construction. The forms cited in (29) reflect those used in the questionnaire, where two verbs appeared in the present tense form (since that is the form they are mostly found in), as reflected in the English translations.

- (29) a. Russian verbs that do not open a nominative slot:
ostalos ‘had to’, *povezlo* ‘got lucky’, *polagalos* ‘was supposed to’, *prišlos* ‘had to’, *xotelos* ‘felt like’, *udalos* ‘managed to’
- b. Russian verbs that do open a nominative slot:
grozilo ‘was in danger of’, *idet* ‘suits, looks good (on)’, *l’stilo* ‘was flattered to’, *nравилос* ‘pleased, enjoyed’, *oprotivelo* ‘got sick of’, *ne svetit* ‘is not fated to’

For each trigger sentence as in (28a), respondents were asked to rate the appropriateness of a continuation sentence, as in (28b–d). We hypothesized that Russian respondents would be most likely to rate the Object or Circumstance continuation sentences higher than the Subject continuations, since the trigger sentences all presented the events in impersonal constructions. English respondents should show a higher preference for Subject continuations, since they parallel the structure of the personal constructions in trigger sentences.

We distributed 36 questionnaires per language; the English ones went to college-age, non-linguists, non-Slavists, who responded in a classroom setting. The Russian ones were sent to native speakers of Russian who responded via email, and who represented a broader range of ages and backgrounds.

Each questionnaire contained six benchmark sentence pairs, twelve filler sentence pairs, and six trigger sentence pairs. Only the trigger sentence pairs contained the relevant verbs, and only those items were considered in the statistical analysis. The benchmark sentence pairs (three at the beginning of the questionnaire and three at the end) were provided for training purposes and to make sure that the participants understood the task (participant reliability). The purpose of the filler sentence pairs was to prevent participants from guessing what we were testing.

The trigger sentence pairs contained the items of interest, i.e. the independent variables. There were two types of independent variables, corresponding to the experiencer and the instigator. The experiencer had two levels: True Experiencer vs. Agentive Experiencer. The instigator had three levels, corresponding to the three possible continuation sentences: Subject (like 28b), Object (like 28c), and Circumstance (like 28d). For each of the twelve verbs we created three different token sets to minimize the influence of lexical effects. Each participant judged each factor level combination only once and judged only one variable level combination from each token set. In other words, each participant saw only one possible continuation (Subject, Object, or Circumstance) for each trigger sentence. Both fillers and triggers were presented in randomized order in every questionnaire to avoid order effects, making sure that no two triggers followed each other and that no questionnaire started or ended with a trigger item. Each questionnaire thus contained a series of pairs of sentences. No participant saw the same trigger sentence, or even the same trigger verb, more than once.

The dependent variable was discourse coherence. In order to measure this parameter, each participant was asked to judge how well the two sentences in each pair fit together. This judgement was measured on a five-point Likert scale, where +2 meant that the sentences fit very well together, +1 meant that they fit well together, 0 meant there was a neutral relationship between sentences in a pair, -1 meant that the sentences did not fit well together, and -2 meant that the sentences fit together very poorly. As a result we collected 36 judgments for each variable level combination in each language.

The data were analyzed using both the Means Model (which models means) and the Multinomial Model (which models proportions) and no statistically significant contrasts were found. This means that our data does not contain any evidence to support the hypothesis that speakers of Russian and English have different assumptions as to who or what is responsible for the need, opportunity, requirement, etc. to do something. It appears that speakers' expectations are not guided by the structure of their language, but by the situation itself.

Although we failed to find a statistical difference in the way that Russian vs. English speakers rate the coherence of sentences from token sets like (28), this does not necessarily mean that there is no difference in the "thinking for speaking" that Russian and English speakers engage in. The test we used did not reveal any such differences, but we must remain agnostic about whether such differences do exist. Perhaps if these differences exist, they could be revealed by different means. For example, it might be possible to design a different kind of psycholinguistic experiment with a different task, for example a (speeded) forced-choice task, or an online task using a very sensitive instrument such as an eye-tracker. Another alternative might involve an analysis of corpus data, perhaps from parallel Russian/English corpora.

5. Conclusion

This article has taken on an implicit challenge within construction grammar by showing that the core constructions of a language can be modelled as a radial category. The radial category of Russian core syntax reveals a network of constructions that are linked to each other via metonymic (addition/removal of participants) and metaphorical (mapping between different participants) relationships. Neighboring constructions show parallels and involve contiguous, partially overlapping semantics. For example the impersonal $v + D$ construction behaves in ways somewhat parallel to the impersonal $v + A$ construction, and both are influenced by their metonymic relationships to personal constructions containing a canonical

nominative subject, namely the $N + V + D$ and the $N + V + A$ constructions. The $V + D$ construction and the $V + A$ construction are similar in that they admit two kinds of verbs: verbs that can appear in personal constructions (with a nominative subject), and also verbs that can only appear in impersonal constructions. For the $V + D$ construction, this means that an accompanying infinitive can either serve as a type of non-canonical subject, filling the slot of the nominative, or, if the verb does not open a nominative slot, the finite verb is more auxiliary-like and there is no subject position available at all. In the first case we claim that the dative participant is a True Experiencer, whereas in the second case we claim that the dative participant is an Agentive Experiencer. An elicitation experiment found that native speakers of Russian can consistently differentiate between finite verbs that open a nominative slot and have a True Experiencer vs. finite verbs that cannot open a nominative slot and have an Agentive Experiencer.

From the perspective of cognitive linguistics, different constructions are seen as different ways of encoding different sorts of relationships among elements. Thus, differences in constructional patterns can reveal differences in semantic structure, and possibly also in conceptual structure. Whereas in Russian one expresses situations of need, requirement, frustration and the like using the impersonal $V + D$ construction with the human experiencer in the dative case, the translation equivalents in English are personal constructions where the human experiencer is a canonical subject of the verb. It is reasonable to ask whether the grammatical differences between the two languages correspond to a conceptual difference in terms of “thinking for speaking” (Slobin 1996). Perhaps the English preference for a nominative subject corresponds to a tendency to view the human experiencer as the instigator of a situation, whereas the Russian preference for a dative-marked (agentive) experiencer corresponds to a tendency to assign the cause to an object or circumstance? In order to probe this possibility, we designed a discourse cohesion experiment in which Russian and English speakers rated the compatibility of pairs of sentences. The first sentence in each pair contained a $V + D$ construction in Russian (for Russian speakers), or (for English speakers) its translation equivalent in English. The second sentence asserted that the instigator of the situation was either the experiencer, another object, or a circumstance. We did not find any statistically significant difference between the Russian and the English responses. At this point, we can neither affirm that there is a conceptual difference, nor exclude the possibility that such a difference might exist; it may be that a different kind of test or experimental design could still reveal a difference.

Abbreviations

A	Accusative
D	Dative
G	Genitive
I	Instrumental
INF	Infinitive
L	Locative
N	Nominative
PP	Prepositional phrase
V	Verb

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