

# From data to theory: an emergent semantic classification based on the large-scale Russian constructicon

Laura A. Janda (1), Anna Endresen (1), Valentina Zhukova (1), Daria Mordashova (2, 3), Ekaterina Rakhilina (4)

1: UiT The Arctic University of Norway

2: Lomonosov Moscow State University

3: Russian Academy of Sciences

4: National Research University Higher School of Economics

## Abstract

The semantic classification of over 2,200 constructions in the Russian Constructicon has emerged objectively from empirical analysis. The resulting semantic classification comports with and goes beyond frame semantics, revealing complex patterns of related constructions verified against corpus data and by a panel of native speakers. Our model of a constructicon can inform and complement existing approaches with additional findings. We detail our discovery procedure and the semantic relationships that link constructions. While our methods and findings are based on a single language, they can serve as a basis for cross-linguistic comparison in the field of Construction Grammar and constructicography research.

**Keywords:** Construction Grammar, constructicon, Russian, semantics, corpus

## 1. Introduction

In recent decades, the Construction Grammar framework has generated numerous thorough studies of individual constructions found in various languages (e.g., Fillmore et al. 1988, Rakhilina 2010, Barðdal et al. 2012, Klavan & Veismann 2017, Janda et al. 2020, Goldberg & Herbst 2021, among many others). Yet little is known about how the semantics of an entire system of constructions is structured in a single language. What are the major types of meanings that multi-word grammatical constructions can encode? What semantic types of constructions are attested more often than others? Do various types of constructional meanings form a coherent system? Presumably, these questions can be answered only if one has access to a relatively large inventory of constructions of a single language, a constructicon (Fillmore 1988: 37; Fillmore et al. 2012; Lyngfelt 2018: 6), and a detailed description of this inventory, in particular a semantic classification.

Today we are in a position to offer preliminary answers to these questions, based on data from the Russian Constructicon, an open-access electronic resource that offers a searchable database of over 2,200 Russian constructions (and more constructions continuously added), accompanied with descriptions of their properties and illustrated with corpus examples (<https://constructicon.github.io/russian/>). The scope of this database exceeds that of constructicons available for other languages (compare for example the Berkeley constructicon for English with 73 constructions, the Swedish constructicon with approx. 400 constructions and the German constructicon/FrameNet with approx. 400 constructions). We discovered that size matters because once we crossed a threshold beyond approximately one thousand constructions (described below), clear patterns emerged, yielding a relatively stable system of semantic meanings and relations among constructions.

In this article we present a multi-level semantic classification that accounts for the entire database of the Russian Constructicon. Our analysis reveals a semantic system characterized by hierarchical groupings and by lateral relationships among constructions. In hierarchical

groupings, small groups of constructions comprise families, families pattern together as clusters, clusters form networks, and networks yield superordinate semantic classes. Both within and across groups, conceptual and structural similarities bind constructions and groups together. These links create a web of relationships in which every construction is multiply motivated by other constructions that share syntactic, lexical, and/or semantic content.

On the basis of this emergent semantic system, we propose a set of semantic types to capture its structure. We argue that these semantic types reveal how the constructions function as a coherent system. Moreover, we suggest that the major semantic types of constructions identified in our Russian data can potentially serve as the basis for cross-linguistic comparisons.

The semantic classification system of the Russian Constructicon project endeavors to realize a goal repeatedly stated by Langacker: “What is essential is that every language and every construction be characterized in its own terms” (2008: 423; cf. similar passages on pages 11, 272, 360, and 436 of the same book). In sum, our approach is agnostic but not isolationist. While we choose not to limit our data collection or our analysis to existing approaches, our approach is informed by other approaches, and we strive to provide a system that is relevant also for cross-linguistic comparison.

Collecting and analyzing a large-scale constructicon of a language extends the reach of our project beyond what might be achieved from within the confines of any a priori assumptions. Our aim has been to collect a maximally inclusive inventory of Russian constructions and analyze them on their own terms, allowing patterns to emerge from the data. Our findings both comprehend and extend the bounds of both typology and frame semantics.

Typology has traditionally focused on grammatical categories and, to a lesser extent, lexicon. While both grammatical categories and lexical items are key components of constructions, constructions are also units in their own right, with meanings not necessarily directly derivable from their composition (Goldberg 2006). Insights from typology are certainly relevant to the semantic classification of the Russian Constructicon, for example concerning the meanings of categories such as grammatical case and the polysemy of lexical items that serve as anchors and fillers in grammatical constructions. However, the Russian Constructicon has not been constrained by typological assumptions, nor by the fact that multi-word linguistic units are not central to linguistic typology. Our unfettered approach has facilitated analysis of the complex mix and interplay of grammatical and lexical categories, of elements and constituents from different “levels” of linguistic structure, from morphological affixes through multi-word constructions to discourse information packaging strategies.

The bottom-up approach of the Russian Constructicon does not mean that this research has been conducted in a theoretical vacuum. On the contrary, though without imposing expectations, our results are verified against proposed universal sets of grammatical and lexical meanings that date back at least to Jespersen’s (1924) list of “conceptual categories” (see a more comprehensive discussion of this history in Plungian 2011: 94–95). This tradition includes Nida’s (1949: 166–169) lists of the most common meanings expressed by morphemes in the world’s languages and Dik’s (1989) theory of functional grammar, and, among more contemporary scholars, in the works of Jackendoff (1983, 2002) and Talmy’s (1985, 2000) observations on what types of meanings tend to be expressed grammatically vs. lexically. From the perspective of Russian scholarly traditions, the most prominent relevant works are those of Bondarko (1984), who proposes “functional-semantic fields”, Mel’čuk’s

(1998) classification of morphological meanings based on Jakobson’s (1957) universal classification of grammatical meanings, and Chvany’s (1998) “universal menu” of semantic features.

A non-trivial outcome of our study of a large dataset is that most semantic meanings are accounted for in the purportedly “universal” inventories of meanings proposed by typologists referenced in the preceding paragraph. In other words, most of our findings fit neatly into existing semantic classifications, though some fall beyond these boundaries. For example, it is known that some languages convey the unexpectedness of an outcome with a mirative grammatical marker (DeLancey 1997, Aikhenvald 2012). The Russian Constructicon identifies “Mirative” as a semantic type for constructions like ID 61 **NP-Nom voz’mi i VP-Pfv.Imp**, as in (1). However, some semantic types found in the Russian Constructicon do not comport with categories found in grammars, such as the “Salient Property” semantic type (and for this example “Belonging to a class” subtype) for constructions like ID 520 **NP iz Adj-Gen**, as in (2).

- (1) *A on voz’m-i i kup-i nov-uju mašin-u!*  
 [and he.NOM take-IMP.SG and buy-IMP.SG new-F.ACC.SG car-ACC.SG]  
 ‘And he (suddenly, unexpectedly) bought a new car!’
- (2) *čelovek iz ljubopytn-yx*  
 [person.NOM.SG from curious-GEN.PL]  
 ‘a very curious person’

Crucially, the semantic classification of the Russian Constructicon is not merely an inventory of types. It is an intensely interwoven network of overlapping groups that share (nearly) synonymous meanings and similar or overlapping forms. Our study reveals not only what types are present, but also how they interact and mutually support the whole of the Russian Constructicon.

Our study clearly shows that in a natural language the meanings that are expressed on the grammatical level are often also expressed (and duplicated) on the syntactic level, that is by grammatical constructions that are multi-word constructions with non-transparent semantics and anchor words. While there are different trends in the way the grammatical vs. lexical meanings are distributed, there are no sharp boundaries between the meanings expressed by grammatical categories and the lexicon, and in grammatical constructions we often observe redundancy with a given meaning expressed in multiple ways in a single construction. For example, Russian grammar is famous for its verbal category of aspect, in which perfective verbs can express (among other things) that a process has achieved a result. The Russian Constructicon presents over forty constructions that express Achieved result, such as ID 626 **VP do konca**, as in (3). Typical of this subtype of constructions is the redundant expression of a result both by use of a perfective verb form and by a grammatical construction.

- (3) *My sdela-l-i rabot-u do konc-a.*  
 [we.NOM do-PST-PL job-ACC.SG to end-GEN.SG]  
 ‘We did the job completely’.

Constructions can be understood as quasi-grammaticalized structures. As a system, the constructions of a language function in a way that is intermediary between grammar and lexicon. Grammar is relatively constrained: a given grammatical meaning is usually expressed

by a single marker or a small, closed class of markers with a restricted predictable distribution. Number, case, and person are typical examples, often with a single morpheme to mark each value (for example, plural, dative, first person) or combination of values (such as dative plural or first person singular) and variants that depend on inflectional class and/or phonotactics. Full grammaticalization thus presents a system of mono-semantic grammemes (although of course each grammatical meaning may be internally complex). By contrast, the Russian Constructicon reveals a system obtained through partial grammaticalization. We can refer to this process as “constructionalization” (Traugott & Trousdale 2013 and references therein). The resulting system is less constrained than core grammar in that each specific meaning may be expressed by a multitude (as many as a dozen or more) different constructions. Constructionalization exposes linguistic units to gradual semantic bleaching of anchor words and syntactic structures that harmonize a group of constructions into a family. Remnants of the original lexical semantics of anchor words and of syntactic structure persist, holding a given group of constructions together through close but not perfect synonymy.

These semantic remnants maintain fine-grained semantic distinctions even among closely related constructions. Prohibitive and nominal quantifier constructions illustrate this phenomenon. Within the network of prohibitive constructions, it is possible to distinguish among constructions used to express prohibition of an action that would negatively impact the speaker, of excessive action, and of specific types of actions (such as compliments). The Russian Constructicon contains numerous constructions with nominal quantifiers that all mark a large amount of something but differ in terms of the kinds of objects they imply: *buket* ‘bouquet’ is used with a large quantity of unpleasant events, whereas joyful events are quantified in construction with *fontan* ‘fountain’ (Rakhilina & Li 2009, Kibisova 2020).

The semantic classification of the Russian Constructicon is compatible with, but not constrained by frame semantics. Frame semantics is designed with a focus on argument structure constructions centered around specific verbal lexemes or predicates and their semantic classes (Fillmore and Atkins 1992: 75; Torrent et al. 2014; Boas et al. 2016; Ohara 2018). This makes frame semantics an excellent tool for making sense of predicate argument constructions. However, the majority of syntactic patterns evidenced in the Russian Constructicon deviate from the pattern of predicate argument constructions. Figure 1 visualizes the distribution of constructions according to syntactic types, highlighting the difference between types that are the focus of frame semantics and those that are not.

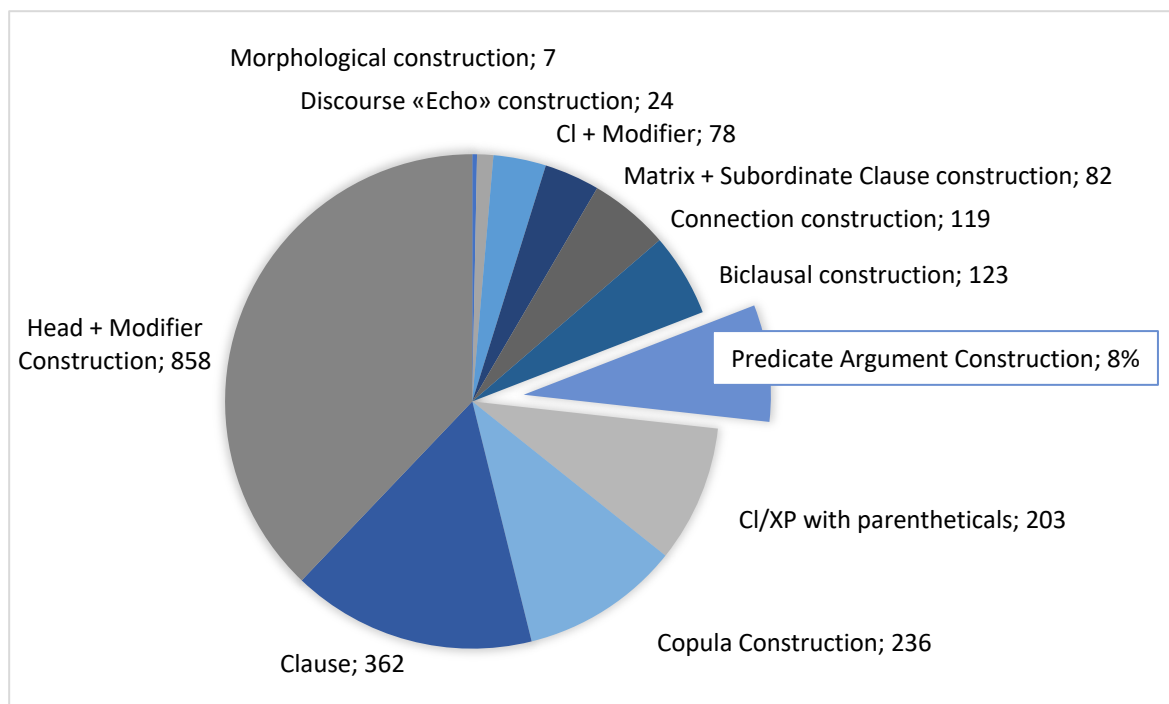


Figure 1: Distribution of syntactic types of constructions in the Russian Constructicon. Each type is labeled, and the number of constructions is shown. There are 184 predicate argument constructions, constituting only 8% of the total.

Only 8% (184 items) of the constructions in the Russian Constructicon are predicate argument constructions like ID 2317 **NP-Nom tjanu-t' s NP-Ins**, as in (4). The bulk of the Russian Constructicon comprises other syntactic types that are less amenable to analysis via frame semantics. These include some types of very high frequency, such as Head and Modifier constructions (38% of the total) like ID 1699 **NP-Nom Cop/VP pod rukoj**, as in (5).

- (4) *Začem tjanu-t' s otvet-om?*  
 [why pull-INF with answer-INS.SG]  
 'Why are you **hesitating** to answer?'

- (5) *U menja vseгда est' zapasn-oj ključ pod ruk-oj.*  
 [by I.GEN always be.PRS.3SG spare-M.NOM.SG key.NOM.SG under hand-INS.SG]  
 'I always have a spare key **handy**'.

We observe a multitude of less common syntactic types, such as:

- morphological constructions (7 constructions, 0.3% of total) like ID 1800 **Adv-ovato/-evato**:

- (6) *Posle pereezd-a v dom-e by-l-o pust-ovato.*  
 [after move-GEN.SG in house-LOC.SG be-PST-N empty-ish]  
 'After we moved, it felt **rather empty** in the house'.

- discourse “echo” constructions (24 constructions, 1% of total) like ID 2348 **kakoj/kakoe tam XP**:

- (7) *– Duma-l-a, čto na pensi-i ty uspoko-iš'-sja...*

[think-PST-F that on retirement-LOC.SG you.NOM calm.down-FUT.2SG-REFL

- *Kak-oe tam “uspoko-iš’-sja”!*  
which-N.NOM.SG there calm.down-FUT.2SG-REFL]  
‘– I thought that you would calm down when you retired...
- **What do you mean**, “calm down”! I am not going to calm down!’

Constructions such as these make it possible to extend and enrich our model of a Constructicon beyond the bounds of the typical focus of frame semantics. The Russian Constructicon thus includes a wide variety of syntactic types that incorporate constituents of various levels of linguistic structure. These structures range from morphological elements (e.g., specific derivational morphemes, like *Adv-ovato/-evato*) to complex discourse structures that go beyond a single sentence and incorporate preceding context (like “echo” constructions and other types of constructions that express a reaction to previous discourse).

The remainder of this article is organized as follows. In Section 2, we introduce the Russian Constructicon as the source of our data and the target product of this project. In Section 3, we explain the methodology of semantic annotation and our approach to data analysis. In Section 4, we present the system of semantic types that organize the constructions into large classes, networks, clusters, and families. We identify and illustrate each semantic type, discuss how individual constructions are distributed across these semantic types and how the semantic types overlap with each other and form a hierarchy. In the concluding Section 5, we summarize the implications of this study for Construction Grammar and cross-linguistic comparison of grammatical constructions.

## 2. The data: The Russian Constructicon resource

Our searchable database of over 2,200 grammatical constructions in Russian has been designed for linguists, language learners, and NLP specialists and is the largest ever collected and fully described inventory of constructions of a single language. The entire dataset of the Russian Constructicon is publicly available at <https://constructicon.github.io/russian/>. Both the data and the code for the user interface are open-source and freely accessible so that they can be accessed and adapted by other researchers.

The Russian Constructicon fills a gap in existing resources by targeting language-specific constructions that are inadequately represented by dictionaries and grammars. The Russian Constructicon focuses primarily on multi-word grammatical constructions that feature both a lexically fixed part and slots that can be filled with a variety of linguistic units. In other words, the Russian constructicon focuses on so-called “partially schematic” constructions that are somewhere between idiomatic expressions and compositional syntactic units (Ehrlemaek et al. 2016).

The fixed part is called the “anchor” and is usually one or more words, though it may also consist of one or more morphemes or a syntactic pattern such as word order or reduplication. To illustrate, the *NP-Nom tjanut’ s NP-Ins* construction (ID 2317) introduced above contains two anchor words, *tjanut’* ‘pull’ and the preposition *s* ‘with’, whereas the *Adv-ovato/-evato* construction (ID 1800) has as its anchor a derivational morpheme with the attenuative meaning ‘-ish’. The former construction has two slots, only one of which, NP-Ins, is filled with the word meaning ‘answer’ in the example *Začem tjanu-t’ s otvet-om?* [why pull-INF with answer-INS.SG] ‘Why are you hesitating to answer?’. The latter has only one slot for an adverbial stem such as *pusto* ‘empty’.

Each construction in the Russian Constructicon is supplied with a constellation of identifiers and information. This includes the following (partly illustrated with data from one of the constructions cited above):

- unique ID number, here 1699.
- name: this is a schematic version of the construction with its anchor words, and with slots represented by linguistic annotations (most of these directly derived from the Leipzig glossing rules; Comrie et al. 2008), here *NP-Nom Cop/VP pod rukoj*, see glossing in (5).
- illustration: a brief example, here *U menja vseгда est' zapasnoj ključ pod rukoj* 'I always have a spare key **handy**'.
- definition: this explains the meaning of the construction and is annotated for semantic roles given in square brackets, here "The construction means that an [object]<sub>Instrument</sub> is at present [located]<sub>State</sub> in the immediate vicinity of the [participant]<sub>Possessor</sub>, and the participant can use this object for its given purpose. It is as if the participant could just reach out an arm and pick it up." Definitions are provided in Russian, English, and Norwegian.
- 5 corpus-based examples from the Russian National Corpus ([www.ruscorpora.ru](http://www.ruscorpora.ru)) that are annotated for the same semantic roles as the definition.
- CEFR level: the Common European Framework of Reference for Languages scale of proficiency levels, here B2.
- common fillers: this is a list, here of verb forms.
- semantic tags/types: here Possession and Spatial expression with subtype Location
- syntactic type of construction: here Head and Modifier Construction
- anchor: syntactic function (here: Modifier) and syntactic structure (here: Prepositional Phrase) and part of speech (here: Preposition and Noun)
- dependency structure for both the name and illustration of the construction (according to Universal Dependencies standards)
- additional information such as intonation, communicative type, usage label, and references.

A full set of instructions explaining all terms, abbreviations, and search functions is provided on the site in both English and Russian. Search functions make it possible to search both for strings and parameters. Search is possible for all strings in the ID number, the name, and the illustration of a construction. Parameters that are searchable include morphological categories, syntactic and semantic types, characteristics of the anchor (its syntactic function, structure, and part of speech), semantic roles, and CEFR level. Instructional videos explaining how to use all the search functions are available in both English and Russian:

<https://www.youtube.com/playlist?list=PLUzLnIT3QLjKheIfFsryUT1nXvxdb9b75>.

At present all constructions in the Russian Constructicon are tagged for semantic types and work on supplying definitions and examples is not entirely complete, but ongoing. More constructions will likely be added, since the constructicon of a language is in principle open-ended.

In the remainder of this article, we will cite constructions according to the two identifiers "name" and "illustration" described above, additionally supplied with Leipzig gloss and smooth translation.



### 3. The methodology: behind-the-scenes of semantic annotation of constructions

This section traces the development of the Russian Constructicon to provide context for the semantic classification showcased in Section 4. We briefly describe the methods of collection and analysis and how they evolved over the course of five years. Our methods combined various perspectives with a good deal of trial-and-error in which we repeatedly revised the classification, each time optimizing how the system reflected the emergent patterns observed in our data.

#### 3.1 Collecting constructions

With the benefit of hindsight, we recognize that our collection of constructions took place in three phases: initial inventory, corpus-based expansion, and system-based expansion (Janda et al. 2020). In the initial inventory phase, we collected 660 constructions manually from textbooks (e.g., Janda & Clancy 2002) and scholarly literature (e.g., Rakhilina 2010). For details on collection and selection of constructions see Endresen et al. *forthc*. In this phase we also invited colleagues to contribute constructions to a crowd-sourced Google spreadsheet. We began to work out the parameters of the constructicon and conventions for describing constructions. Corpus-based expansion was carried out by culling constructions from samples of running text and from an automatically extracted list of highly frequent collocations attested in the Russian National Corpus, yielding 427 additional constructions. As we reached the end of the second phase, the need for continuous revision of the classification waned as a relatively stable system emerged. With over one thousand constructions analyzed, the classification became robust enough to facilitate the identification of “families” of constructions and sketch the relationships among them. Taken together the first two phases took four years, but in a period of only seven months the third phase more than doubled the size of the constructicon database, adding 1180 constructions. System-based expansion took the families of constructions from phase two as the point of departure to seek constructions with similar characteristics: synonymous (or antonymous) meanings, similar syntax, and shared anchor words. This third phase brought considerable refinements to the classification, but no large-scale revisions. In essence, the semantic classification co-evolved with the collection of constructions. While we cannot claim that our inventory of semantic tags is exhaustive, we believe that the major semantic types and their relationship have been identified. If and when we add more data in the future, it is possible that additional minor semantic subtypes will be revealed, but unlikely that we will need to overhaul the entire classification system.

#### 3.2 Semantic classification informed by various approaches and at various levels

This section provides methodological background for the more detailed presentation of the semantic classification in Section 4.

In identifying the inventory of semantic types (implemented as semantic tags) we benefited from a combination of bottom-up and typological approaches. As described above in Section 1, we endeavored to remain faithful to and generalize from the observable data rather than relying on a priori assumptions. Through this approach we were able to avoid constraints on the types of constructions that we collected (see the discussion of frame semantics in Section 1). However, we continually compared our findings to the distinctions and grammatical categories established in the typological and Russian linguistic literature, e.g., the “Universal Grammatical Inventory”, a subset of which is represented in each language (Plungian 2011: 65). Such categorizations were implemented wherever this was possible without distorting the patterns observed in our data. A full list of scholarly sources for semantic types can be accessed here: <https://constructicon.github.io/russian/semantic-types/>.



In order to accurately capture the complexity of constructional semantics, a multi-level system of tags was developed. The semantic tags are arranged in a hierarchy with fifty-five general tags, many of which have one or two further levels of specificity, yielding 182 semantic subtypes of constructions. A given construction is not limited to a single semantic specification, but can receive a variety of both general and specific tags. Thus the semantic classification represents both hierarchical semantic relationships and lateral connections among constructions and groups of constructions. Our semantic tags are related to each other and form a hierarchy. General tags are organized in subclasses, such as Situation structure, Situation modifiers, Properties, etc. Subclasses form superordinate classes that we term Qualia, Modality & its neighborhood, Subjectivity, Discourse, and Parameters. Over 40% of constructions carry multiple tags that capture different components of semantics. Thus, semantic types, subclasses and classes of tags often overlap at the level of individual constructions, and we can examine what kinds of overlaps are attested more frequently than others. We will show that our semantic classification gives a multi-dimensional overview of the system of Russian constructions and can potentially be used for cross-linguistic comparisons.

The semantic annotation in the Russian Constructicon reveals an intensely interconnected system of constructions with internal structure consistent with the theoretical framework of cognitive linguistics. Constructions are organized into families (the smallest groups), clusters (groups of families), and networks (larger groups defined by the general semantic tags)<sup>1</sup>. At each of these levels we observe radial category structures with prototypical members and more peripheral ones, and it is primarily the more peripheral items that knit the whole together by means of lateral affiliations that join groups to each other.

Many semantic tags in the Russian Constructicon comport with the terminology used in typological studies of grammatical meanings. We adopt and adjust this terminology for annotation of constructional meanings, revealing that many types of meanings that are encoded morphologically in other languages can be expressed in Russian by means of syntactic constructions. For example, our tag Phase of Action has the subtypes Inchoative, Continuative, Terminative, and Cunctative, according to the typologically inspired terminology proposed in Plungian 1999. At the same time, our system goes beyond typologically attested and typically grammatical meanings and additionally covers semantic types that are suggested by our data, e.g., Salient property, Non-existence, Attitude, etc.<sup>2</sup>

### 3.3 Semantic annotation as a team effort

The semantic annotation of constructions in the Russian Constructicon has been carried out by an international team of scholars with both overlapping and complementary expertise as linguists and teachers of Russian as a second language. The team included both native and non-native speakers of Russian, and this combination proved essential to the discovery of

---

<sup>1</sup> In our inventory, most semantic types are heavily populated and comprise a whole network of constructions each (e.g., semantic type Assessment constitutes a large and highly diverse network of 225 entries that form four clusters consisting of 25 families). Yet, there are a few semantic types that are less populated and correspond to a cluster (e.g., semantic type Caritive is a cluster consisting of three families formed by 16 constructions), and, even more rarely, only one family of constructions (e.g., semantic type Actuality comprises a single family of three constructions). Such small semantic types are few; they show that there is room for further expansion of the inventory.

<sup>2</sup> See example (2) to illustrate Salient Property. An example of Non-existence is ID 1455 **NP na nule** (as in *immunitet na nule* ‘zero-immunity’). An example of Attitude is ID 482 **NP-Dat net dela do NP-Gen** (as in *Mne net dela do tvoix deneg* ‘I don’t care about your money’).

special challenges and their solutions. A core team of six colleagues collaborated intensely on the building of the Russian Constructicon over a period of more than five years. The semantic classification was the most challenging aspect of the project. Every single annotation was achieved through a process of negotiation to reach consensus, and in many cases the annotation of individual constructions was revisited and updated multiple times. In no situation did annotators work independently of each other, so there is no issue of inter-annotator reliability. Furthermore, the entire classification system was repeatedly revised, again with input from the entire team.

In sum, our method yielded a dataset large enough to reveal the systematic semantic structure of Russian constructions, and our classification system was arrived at through a labor-intensive collaborative effort over a period of more than five years. While the result may still be imperfect in some details, it is quite comprehensive and robust. If future updates to the classification system are needed, we expect them to be minor.

#### 4. The system of semantic types

We now turn to the semantic classification itself. We begin with a brief overview of the five superordinate classes that comprise the system at the macro-level, and then turn to more detailed presentation of each class with the general and specific semantic tags that pertain to each.

We group the constructions in five superordinate classes termed: 1) Qualia; 2) Modality and its neighborhood; 3) Subjectivity; 4) Discourse; and 5) Parameters. Qualia is a cover term for constructions that describe the properties of the given objective physical world, external to the speaker. The class Modality and its neighborhood includes both root and epistemic modality, as well as various means to impose or remove barriers to action. Under Subjectivity we find constructions that encode the subjective evaluation of a situation, its elements, or participants by the speaker. Discourse constructions serve to structure communication, often with respect to a broader context than a single sentence. Constructions that invoke Parameters provide scales and reference points for evaluating properties and situations. Each of these classes are further elaborated in separate sections below. A simplified visualization of these five classes is presented in Figure 2.

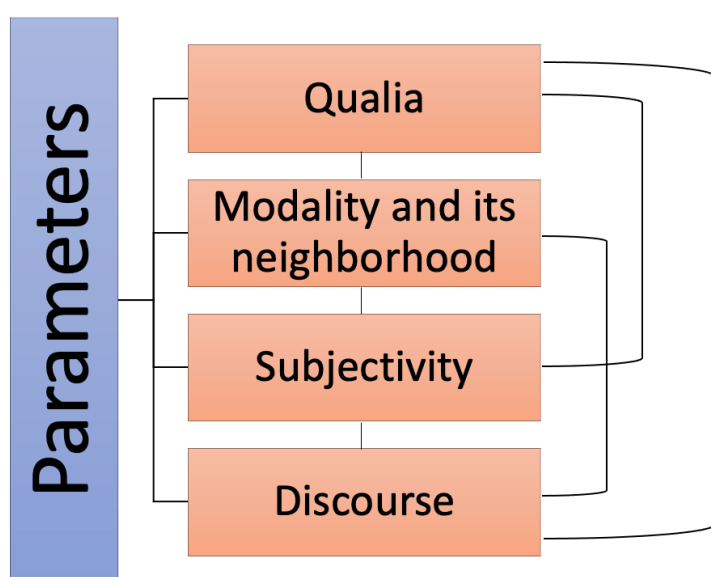


Figure 2: Five superordinate classes of constructions in the Russian Constructicon.

The five classes overlap with each other conceptually, and for every possible pair of these classes, there are individual constructions in our database that are tagged simultaneously for both classes. In addition to such links across pairs of classes, there are some constructions that are tagged for three and even four of the superordinate classes. Thus all five classes are interrelated and overlap with each other as indicated by lines connecting the classes in Figure 2. For example, the semantic type Actuality lies at the intersection of the Situation structure subclass of Qualia and the Modality and its neighborhood class (formally included in the former class); and Epistemic Modality belongs to both Modality & its neighborhood and Discourse (formally included in the former class); Parameters of intensity and accuracy can be combined with various constructions from all other classes and show the highest percentage of overlap (78%). Table 1 displays the distribution of constructions across the five superordinate classes and indicates the extent of overlap across classes.

Class	Total number of constructions in this class	Number of constructions that only belong to this class (no overlap across classes)	Number of constructions that belong to this class and another class(es) (overlap across classes)	% of constructions in this class that overlap with other classes
Qualia	1,419	1,010	409	29%
Modality and its neighborhood	301	195	106	35%
Subjectivity	485	206	279	58%
Discourse	357	183	174	49%
Parameters	337	75	262	78%

Table 1: Distribution and overlap of constructions across the five superordinate classes.

Each row of Table 1 represents the constructions associated with one of the superordinate classes. The first column shows how many constructions are annotated with tags from a given class. For example there are 1,419 constructions that bear a general semantic tag from the Qualia class. Note that due to overlap, if we add up all the figures in the first column, the total is much greater than the total number of constructions currently in the Russian Constructicon. Of the 1,419 Qualia constructions, 1,010 bear no other tag, whereas 409 (29%) are tagged for one or more of the other classes. Note that nearly half (49%) of all constructions in the Discourse class show overlap, and overlap predominates for both Subjectivity (58%) and Parameters (78%). This makes sense because the meanings in these classes add evaluations or discourse connections that are easily combined with other meanings. Further detailed investigation of the types and frequencies of overlap goes beyond the scope of this article, but we address them in Figures 4-14 (see blue dotted lines). See also Endresen & Janda 2020 for an in-depth case study of overlaps.

In the following subsections we present in detail the inventory of semantic types and in some cases indicate how these relate to semantic categories identified by typologists. While we provide some references relevant to the specific examples we cite here as illustrations, it is not feasible in the space of this article to adequately represent the scholarly literature on typological categories. For the same reason we do not provide exhaustive citations of scholarly works discussing individual constructions. The “References” fields in the entries for many constructions on the Russian Constructicon website contain further citations.

#### 4.1 The superordinate class “Qualia”

Qualia is a term borrowed from philosophy where it is defined as individual instances or forms of conscious experience and intrinsic qualitative properties of experience. We use this term to refer to a large class of constructions that describe the properties of the objective physical world. Qualia is external to the speaker and thus contrasted with the other four superordinate classes of constructions termed Subjectivity, Modality & its neighborhood, Discourse, and Parameters. We apply the term Qualia as an umbrella notion that includes seven subclasses of semantic types, namely: Situation structure, Situation modifiers, Major roles, Logical relations, Properties, Sets and elements, and Magnitude. Figure 3 presents the radial category network of subclasses within Qualia.

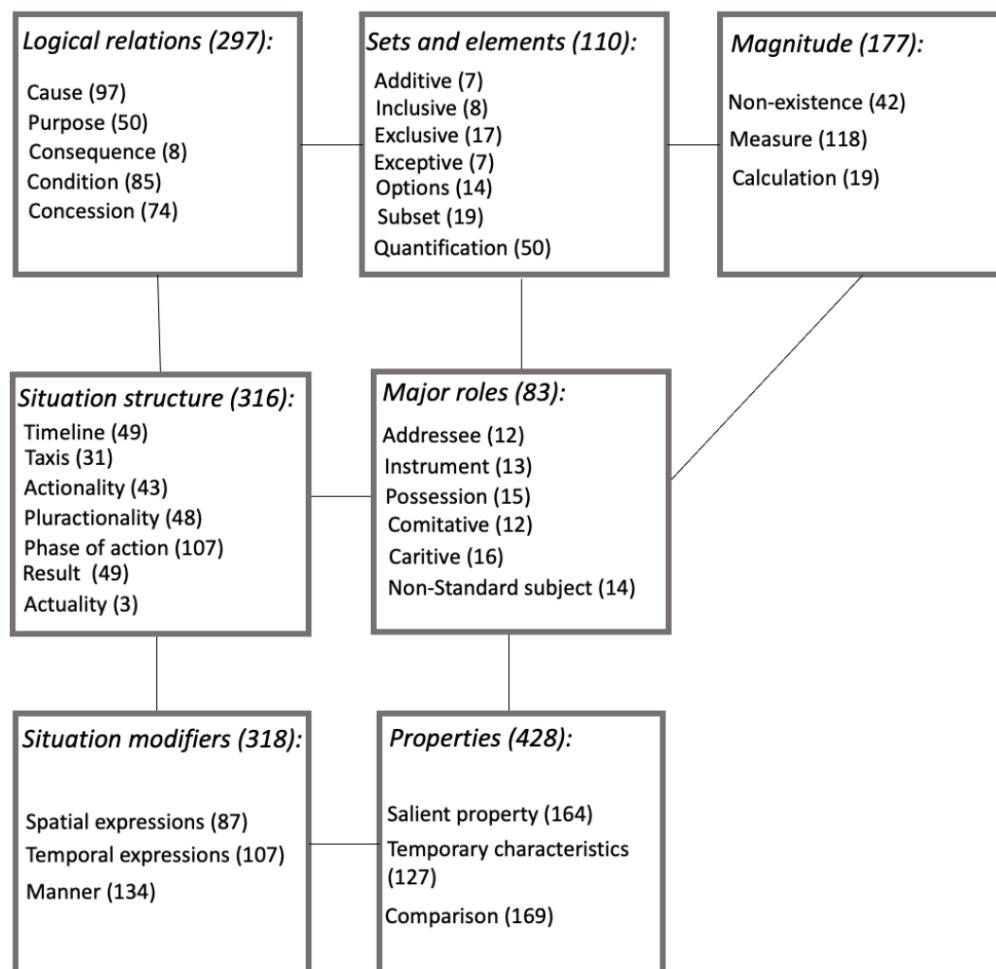


Figure 3: The superordinate class Qualia

Each subclass in Figure 3 is an aggregate of three or more general semantic tags and the numbers of constructions are given in parentheses. Note that in some cases the sum of the totals for the numbers of semantic types can exceed the total for the subclass because some constructions belong to more than one semantic type even within the same subclass: e.g., ID 931VP *golymi rukami* ‘do something with one’s bare hands’ represents both Instrument and Caritive inside the subclass Major roles. Such constructions are counted once in the total for the semantic subclass.

As shown in Figure 3, Situation structure and Major roles are central to the radial category, as they address core concepts used in communication, namely the temporal structure and

participants of a situation. Situation modifiers and Properties describe circumstances of situations and properties of participants, respectively. Logical relations connect more than one event or situation (for example when X causes Y, or A serves as a condition of B). Sets and elements is a group of semantic types that views entities in relation to sets. Magnitude is more peripheral though related to both the Quantification type under Sets and elements and the description of Major roles.

At this point we turn to description of each of the subclasses within Qualia. Throughout the remainder of the article, subclasses and superordinate classes will be presented in diagrams with brief descriptions and illustrative examples of the general semantic tags. Note, however that this is merely a “bird’s eye view” of the structure of the Russian Constructicon. Within each general semantic tag there is more structure, with clusters and families of constructions, and in the case of some of the more numerous general semantic tags, such as Assessment, Attitude, and Prohibition, these structures are quite complex (see Janda et al. 2020 and Endresen & Janda 2020). Figures 4-14 share the same conventions. General semantic types are visualized as boxes, and subtypes are presented by arrows and without boxes. Types that are more central (prototypical) are boldfaced. Numbers in parentheses indicate type frequency (numbers of constructions). Solid lines indicate the relationship of semantic categories within a group, and dashed lines show the relationship of semantic categories beyond the group. Dotted blue lines show other groups or classes that are closely related to or overlap with the general types presented in the figure. Note that while these diagrams of the internal structure of subclasses are available only in this article, these relationships can be deduced by querying the “Semantic Types” menu in the Advanced Search function of the Russian Constructicon.

**Situation structure** (see Figure 4) is an umbrella term for semantic types of constructions that specify structural characteristics of a situation, namely Timeline, Taxis, Actionality, Pluractionality, Phase of Action, Result, and Actuality.

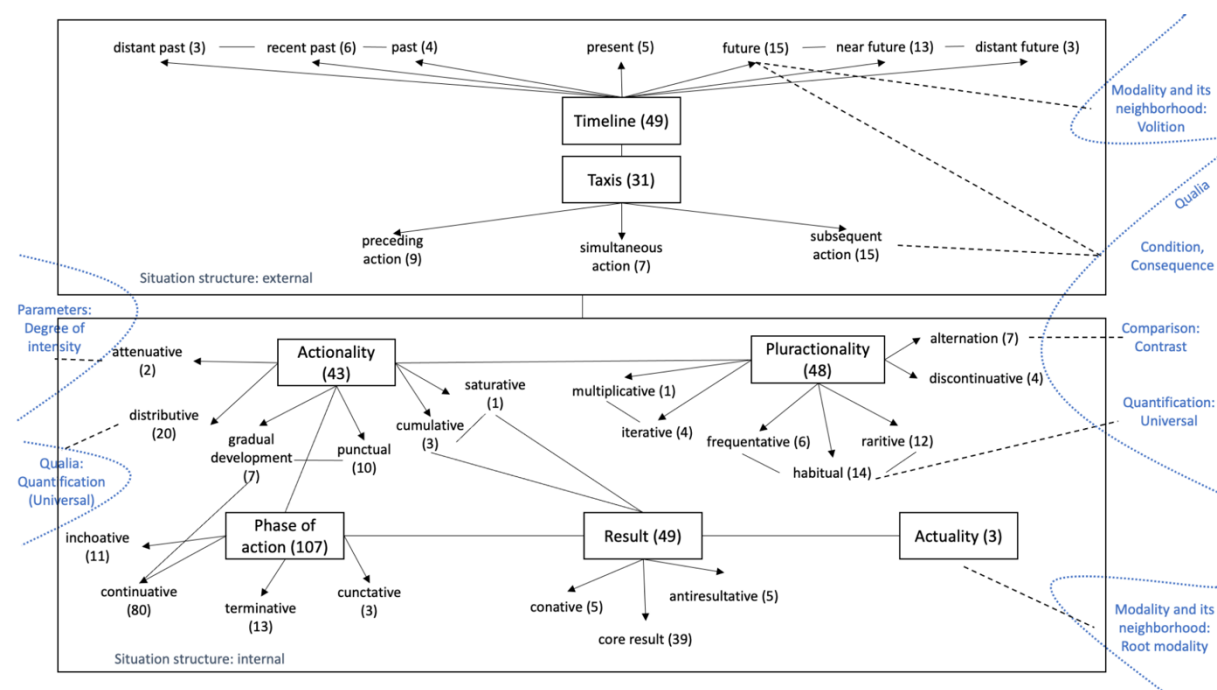


Figure 4: Situation structure subclass of semantic types.

Within the Situation structure group, the semantic types refer either to time external to a situation (Taxis and Timeline at the top of Figure 4), or to the internal structure of a situation

(Actionality, Pluractionality, Phase of action, Result, Actuality at the bottom of Figure 4), and these two groups of general tags can interact with each other. Each subtype is listed below with a single example construction cited by its “name” and “illustration”. Where semantic tags are motivated by specific works of previous scholarship, these are cited. Further on in the descriptions, there are places where only some but not all subtypes are presented with examples of constructions since that would exceed the length of an article. The Advanced Search function on our website makes it possible to filter for all subtypes and find all relevant constructions.

**Timeline** localizes a situation in terms of past, present, and future, with the following subtypes:

- Distant past: ID 2223 **bylo vremja, (kogda) Cl**

(8) *–By-l-o        vrem-ja,        kogda        ee        stix-i        očen’*  
 [be-PST-N    time-NOM.SG    when        her        verse-ACC.PL    very

*ljubi-l-i.*

[love-PST-PL]

‘There was a time when her poetry was popular.’

- Recent past: ID 26 **tol’ko čto VP-Pfv.Pst**

(9) *Vas-ja        tol’ko        čto        prines        den’g-i.*  
 [Vasja-NOM.SG    only        what        bring.PST.M        money-ACC.PL]

‘Vasja brought the money **just now**’.

- Past: ID 1663 **kak-to raz VP-Pst**

(10) *Ja        kak-to        raz        vide-l-a        eë        na        koncert-e.*  
 [I.NOM    somehow    time.ACC.SG    see-PST-F    she.ACC    on    concert-LOC.SG]

‘I saw her at a concert **once**’.

- Present: ID 2239 **NP-Nom Cop na dvore**

(11) *Kuda    ty        sobra-l-a-s’,        noč’        na        dvor-e?!’*  
 [where    you.NOM    plan-PST-F-REFL    night.NOM.SG    on    yard-LOC.SG]

‘Where were you planning to go, **now in the middle of the night?!’**.

- Future: ID 311 **so vremenem Cl**

(12) *So        vremen-em    ona        objazatel’no    nauč-it-sja        gotovi-t’.*  
 [with    time-INS.SG    she.NOM    necessarily    learn-FUT.3SG-REFL    cook-INF]

‘Surely she will learn how to cook **over time**’.

- Near Future: ID 72 **NP-Nom vot-vot VP-Pfv.Fut**

(13) *Vot-vot        prilet-it        samolët.*  
 [Now        land-FUT.3SG        plane.NOM.SG]

‘The plane **is just about to** land’.

- Distant Future: ID 1649 **kogda-nibud’ (potom) VP-Fut**

(14) *Ja        pročitaj-u        èt-u        knig-u        kogda-nibud’        potom.*  
 [I.NOM    read-FUT.1SG    this-F.ACC.SG    book-ACC.SG    sometime        later]

‘I’ll read the book **sometime later**’.

**Taxis** involves temporal localization of events with respect to each other (simultaneity, anteriority, and posteriority). Whereas taxis is usually marked with special verb forms (Khrakovski 2003: 39-40; 2009: 21-22), here we observe constructional means to signify taxis relations between events:

- Preceding action: ID 1620 **CI, pered tem kak CI**

(15) *Pered t-em kak ses-t' za stol,*  
[before that-N.INS.SG how sit-INF behind table.ACC.SG]

*pomoj ruk-i.*  
wash.IMP.SG hand-ACC.PL]

‘Before sitting down at the table, wash your hands’.

- Simultaneous action: ID 1614 **CI v tot NP-Acc, kak/kogda CI**

(16) *Vse axnu-l-i v t-ot moment,*  
[all.NOM gasp-PST-PL in that-M.ACC.SG moment.ACC.SG]

*kogda ona zagovori-l-a.*  
when she.NOM.SG talk-PST-F]

‘Everyone gasped **at the moment when** she started to speak’.

- Subsequent action: ID 1629 **CI, posle čego CI**

(17) *Nužno doves-ti do kipeni-ja, posle*  
[needed bring-INF to boiling-GEN.SG after]

*č-ego dobavi-t' ovošč-i.*  
what-GEN add-INF vegetable-ACC.PL]

‘You first have to bring it to a boil, **and only afterward** add the vegetables’.

**Actionality** refers to a cluster of constructions with aspectual semantics corresponding to various types of Aktionsarten (‘types of action’). Some of these constructions contain a verb with a typical Aktionsart morphological marker, whereas other constructions encode Aktionsart lexically by means of anchor words.

- Punctual (Comrie 1976): ID 785 **VP v odnu minutu**

(18) *Pečal' mo-ja proš-l-a v*  
[sorrow.NOM.SG my-F.NOM.SG pass-PST-F in]

*odn-u minut-u.*  
one-F.ACC.SG minute-ACC.SG]

‘My sorrow went away **in just one minute**’.

- Gradual development: ID 1507 **VP s každym NP-Ins**

(19) *Ėkonomičesk-aja situaci-ja uxudša-et-sja*  
[economic- F.NOM.SG situation-NOM.SG get.worse-PRS.3SG-REFL]

*s každ-ym dn-ëm.*  
with each-M.INS.SG day-INS.SG]

‘The economic situation is getting worse **by the day**’.



- Cumulative (Zaliznjak & Šmelev 2000: 114), referring to the accumulation of results of an action; such constructions usually contain the verbal prefix *na-*: ID 529 **NP-Nom na-Verb NP-Gen.Pl**

(20) *On na-věz domoj mnogo vešč-ej.*  
 [he.NOM CUM-bring.PST.M home many thing-GEN.PL]  
 ‘He brought **a lot of** things home’.

- Saturative (Zaliznjak & Šmelev 2000: 114), a special case or cumulative Aktionsart denoting full or over-saturation: ID 530 **na-Verb-sja (NP-Ins)**

(21) *Zeml-ja na-pita-l-a-s’ vod-oj.*  
 [soil-NOM.SG CUM-saturate-PST-F-REFL water-INS.SG]  
 ‘The soil became **saturated** with water’.

- Attenuative (Zaliznjak & Šmelev 2000: 120), indicating that an action is performed slightly or without effort, marked by prefixes *pri-*, *pod-* or *po-*: ID 1798 **pri-Verb**

(22) *Kat-ja pri-otkry-l-a okn-o.*  
 [Katja-NOM.SG ATT-open-PST-F window-ACC.SG]  
 ‘Katja opened the window **just a bit**’.

- Distributive (Zaliznjak & Šmelev 2000: 120), indicating an action carried out on a set of objects or by a set of subjects, usually containing prefix *pere-*, *po-* or *raz-*: ID 1826 **NP-Nom raz-Verb NP-Acc.Pl**

(23) *Oficiant raz-něs po stol-am podnos-y.*  
 [waiter.NOM.SG DISTR-bring.PST.M across table-DAT.PL tray-ACC.PL]  
 ‘The waiter carried trays **to all** the tables’.

**Phase of action** constructions express the four possible temporal parts of a situation: beginning, middle, end, or lack thereof (Plungian 1999: 317; 2011: 315). According to this in-depth study of phasal semantics, these four values “are concerned with the very fact of the existence or non-existence of the situation at the point of reference as compared to an earlier moment” (rather than with the inner structure of a situation), and therefore phasal values belong to the periphery of the aspectual domain (Plungian 1999: 317).

- Inchoative: ID 148 **NP-Nom kak načat’ VP-Ipfv.Inf!**

(24) *A on kak nača-l kriča-t’!*  
 [and he.NOM how start-PST.M yell-INF]  
 ‘And **all of a sudden** he started yelling’.

- Continuative, for a situation that continues at the given moment: ID 86 **vsě VP-Ipfv da/i ~VP-Ipfv**

(25) *Mal’čik vsě šě-l da šě-l.*  
 [boy.NOM.SG still walk-PST.M and walk-PST.M]  
 ‘The boy just **kept walking and walking**’.

- Terminative: ID 38 **NP-Nom brosit’ VP-Ipfv.Inf**

(26) *Ja brosi-l kuri-t’.*  
 [I.NOM throw-PST.M smoke-INF]  
 ‘I **quit** smoking’.

- Cunctative expresses the “non-beginning” of a situation or continuation of “non-activity” (comparable with English *not yet* and certain verb forms in Bantu languages cf. Plungian 1999: 316; 2011: 314): ID 319 **NP-Nom tak i ne VP**

(27) *Ivan tak i ne ženi-l-sja.*  
 [Ivan.NOM.SG so and NEG marry-PST.M-REFL]  
 ‘So Ivan didn’t get married **after all**’.

**Result** constructions can denote a range of meanings: achievement of a result; lack of a result; attempt to achieve a result. Note that the term Result in the Russian Constructicon covers a larger scope of meanings than the more widely used term *resultative*, which normally refers only to the resultative phase of an action (Plungian 2011: 282; e.g. *dver’ otkryta* ‘the door is open’, *mašina slomana* ‘the car is broken’).

- Antiresultative expresses a violated resultative stage (cf. Plungian 2001). There are two subtypes of antiresultative meaning: 1) a result has not been achieved because progress towards a result is interrupted: ID 120 **edva ne VP-Pst**, illustrated in (28); 2) a result has been cancelled: ID 596 **VP-Pst bylo, no CI**, as in (29).

(28) *Ivan Ivanovič edva ne umer*  
 [Ivan.NOM.SG Ivanovič.NOM.SG hardly NEG die.PST.M]  
  
*posle tak-ogo rozygryš-a.*  
 after such-GEN.SG prank-GEN.SG]  
 ‘Ivan Ivanovich **almost** died after such a prank.’

(29) *Ja pošē-l by-l-o na rabot-u, no pereduma-l.*  
 [I.NOM walk-PST.M be-PST-N on job-ACC.SG but change.mind-PST.M]  
 ‘I was **just about to go** to work, **but** changed my mind.’

- Conative expresses an attempt to perform an action: ID 1687 **NP-Nom probovat’ VP-Inf**

(30) *Vas-ja neskol’ko raz probova-l*  
 [Vasja-NOM.SG several time.GEN.PL try-PST.M]  
  
*otkry-t’ okn-o.*  
 open-INF window-ACC.SG]  
 ‘Vasja **tried** to open the window several times’.

- Result means that a construction refers to an actual event or a state triggered by a preceding situation: ID 1575 **VP do NP-Gen**

(31) *Vs-e ovošč-i nužno zali-t’*  
 [all-ACC.PL vegetable-ACC.PL needed pour.over-INF]  
  
*kipjatk-om i vari-t’ do gotovnost-i.*  
 boiling.water-INS.SG and boil-INF until readiness-GEN.SG]  
 ‘All the vegetables must be put in boiling water and boiled until they are cooked’.

**Pluractionality** describes the number of occurrences of a situation or the repetition of identical phases in its internal structure (Shluinsky 2005: 4; see also Newman 1980).

- Alternation indicates that several situations alternate with each other (Ladygina & Rakhilina 2016): ID 1586 **kogda XP, (a) kogda XP**

- (32) *Kogda vovremja prid-ët, kogda opozda-et.*  
 [when on.time come-FUT.3SG when be.late-FUT.3SG]  
 'Sometimes s/he comes on time, sometimes s/he is late'.

- Frequentative indicates that a situation takes place regularly and more often than expected (Shluinsky 2005:49): ID 326 **to i delo VP**

- (33) *Mam-e to i del-o zvoni-l-i*  
 [mother-DAT.SG PTCL and business-NOM.SG call-PST-PL]  
 'They **kept calling** mom'.

- Raritive indicates that a situation takes place regularly, but more rarely than expected (Shluinsky 2005: 49): ID 73 **vremja ot vremeni CI**

- (34) *Vrem-ja ot vrem-eni ja peresta-ju*  
 [time-NOM.SG from time-GEN.SG I.NOM stop-PRS.1SG]

*čto-libo uspeva-t'.*  
 anything manage-INF]

'Every once in a while I reach a point where I can't get anything done'.

- Discontinuative indicates that a situation is carried out with interruptions (Shluinsky 2005: 49): ID 1599 **VP uryvkami**

- (35) *Ët-oj noč'-ju ona spa-l-a uryvk-ami.*  
 [this-F.INS.SG night-INS.SG she.NOM sleep-PST-F snatch-INS.PL]  
 'She slept **in fits and starts** last night'.

- Iterative indicates that a situation takes place repeatedly (Shluinsky 2005: 49): ID 1022 **VP eščë i eščë**

- (36) *On udari-l eščë i eščë.*  
 [he.NOM hit-PST.M more and more]  
 'He just **kept hitting and hitting**'.

- Habitual indicates that a situation is repeated regularly (Shluinsky 2005: 49): ID 139 **každyj/vsjakij raz VP, (kogda CI)**

- (37) *Každ-yj raz ulyba-ju-s', kogda*  
 [every-M.ACC.SG time.ACC.SG smile-PRS.1SG-REFL when]

*viž-u eë.*  
 see-PRS.1SG she.ACC.SG]

'I smile **every time** I see her'.

- Multiplicative indicates that a situation consists of multiple repeated portions of action (Shluinsky 2005: 49): ID 1829 **VP po NP-Dat**

- (38) *Kuročk-a po žërnyšk-u klju-ët.*  
 [chicken-NOM.SG by grain-DAT.SG peck-PRS.3SG]  
 'The chicken pecks **at each grain** of corn'.

The term **Actuality** is adopted from van der Auwera & Plungian (1998: 103-104), where it has been proposed for expressions meaning that some state of affairs is actualized due to the participant's efforts or some external circumstances. **Actuality** refers to the successful realization of an action (compare the English verb *manage*), or "the successful result of the

ability” (Aijmer 2004: 62). Actuality as a category lies at the intersection of Aspectuality and Modality: ID 488 **NP-Dat udalos’ VP-Inf**

- (39) *Miš-e                      uda-l-o-s’                      pokuri-t’.*  
 [Misha-DAT.SG    manage-PST-N-REFL    smoke-INF]  
 ‘Miša **managed** to have a smoke’.

The **Situation Modifiers** subclass is visualized in Figure 5. Constructions in this subclass provide information regarding spatial, temporal, and manner characteristics of a situation.

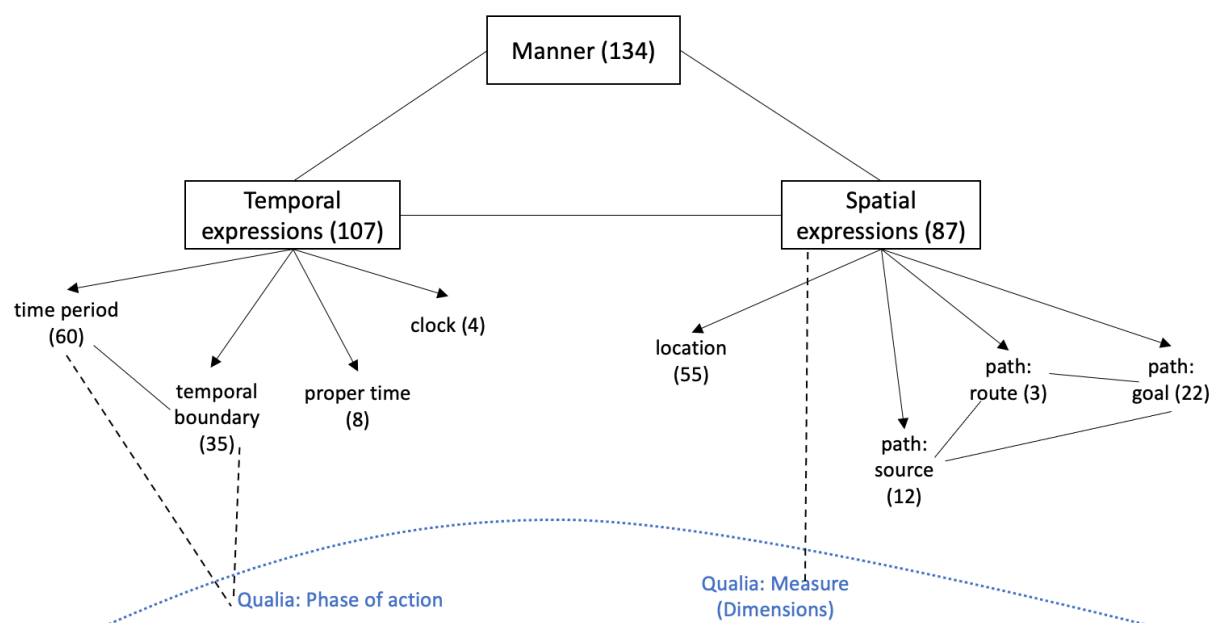


Figure 5: Situation modifiers subclass of semantic types.

**Spatial expressions** can be directional (indicating a path) or locational (see Mitrofanova 2016 and works cited therein).

- Path:Source encodes the starting point of a path of motion: ID 1379 **NP/VP s torca (NP-Gen)**

- (40) *Vxod                      s                      torc-a.*  
 [entrance.NOM.SG    from    side-GEN.SG]  
 ‘The entrance **goes from the side**’.

- Path:Goal encodes the endpoint or destination of a path of motion: ID 507 **NP-Nom vesti v NP-Acc**

- (41) *Dver’                      ve-l-a                      v                      komnat-u.*  
 [door.NOM.SG    lead-PST-F    in    room-ACC.SG]  
 ‘The door **led into** the room’.

- Path:Route encodes the trajectory of a path: ID 849 **VP vdol’ po NP-Dat**

- (42) *My                      poš-l-i                      vdol’                      po                      ulic-e.*  
 [we.NOM    walk-PST-PL    along    along    street-DAT.SG]  
 ‘We set off **along** the street’.

- Location encodes location of an object in space with no reference to motion or direction: ID 272 **XP/Cl pod NP-Ins**

- (43) *Maš-a                      živ-ët                      pod                      Moskv-oj.*

[Masha-NOM.SG live-PRS.3SG under Moscow-INS.SG]  
 ‘Maša lives **in the suburbs of Moscow**’.

**Temporal expressions** refer to time in various ways (distinct from grammatical tense).

- Temporal boundary identifies a point on a timeline that serves as a starting or final point of an action or a situation: ID 111 **do six por Cl**

(44) *Do s-ix por mne grustno.*  
 [until this-GEN.PL time.GEN.PL I.DAT.SG sad]  
 ‘I am **still** (up to the present moment) sad’.

- Time period: ID 582 **VP za NP-Ins**

(45) *On molča-l za obed-om.*  
 [he.NOM be.quiet-PST.M behind lunch-INS.SG]  
 ‘He was quiet **during lunch**’.

- Proper time identifies a suitable time for performing an action (compare to English *high time, about time*): ID 17 **(NP-Dat) davno pora Cop VP-Inf**

(46) *Det-jam davno por-a poes-t’.*  
 [child-DAT.PL long.ago time-NOM.SG eat-INF]  
 ‘It’s **high time** the children got something to eat’.

- Clock is for constructions that state a specific time on the clock: ID 2084 **bez NumCrd-Gen (minut) NumCrd-Nom**

(47) *Prixod-i k bez pjatnadcat-i desjat’.*  
 [come-IMP.2SG to without fifteen-GEN ten.NOM]  
 ‘Come at **a quarter to ten**’.

**Manner** constructions specify how an action is carried out by referring to qualitative characteristics of an activity or the method used to perform an activity: ID 504 **VP-Ipfv bez ustali**

(48) *Žen-a bez ustal-i gotovi-l-a*  
 [wife-NOM.SG without tiredness-GEN.SG cook-PST-F]  
  
*na kuxn-e.*  
 on kitchen-LOC.SG]  
 ‘The wife cooked **tirelessly** in the kitchen’.

Major roles is the subclass shown in Figure 6. The terminology employed for this subclass overlaps with the terms of semantic roles (Apresjan 1974/1995). Here, the types and subtypes we distinguish refer to the semantics of entire constructions, and the terms indicate various kinds of interaction between the participants of a situation or different types of situations (e.g., possession, absence of a participant, etc.).

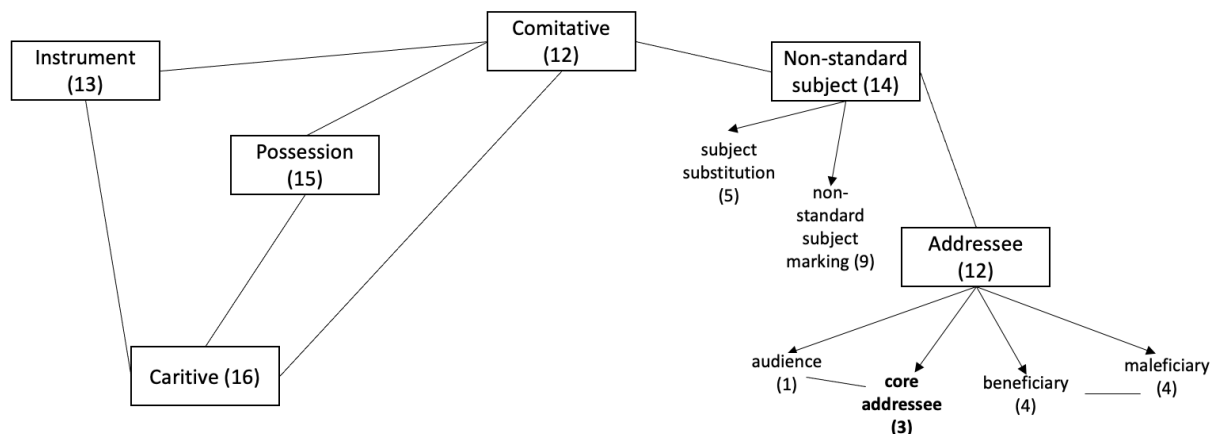


Figure 6: Major roles subclass of semantic types.

**Instrument** encodes an object used by a participant in order to carry out an action: ID 1295

**VP s pomošč’ju/pri pomošči NP-Gen**

(49) *On vs-ě počini-l s pomošč’-ju*  
 [he.NOM everything-ACC fix-PST.M with help-INS.SG]

*otvërtk-i.*

screwdriver-GEN.SG]

‘He fixed everything **using** a screwdriver’.

**Caritive** indicates the absence of a secondary agent or the absence of an object possessed by the main participant of the situation (Plungian 2011: 125, Oskol’skaja et al. 2020): ID 1413

**NP-Nom Cop bez NP-Gen kak bez ruk**

(50) *Ja bez čas-ov kak bez ruk.*  
 [I.NOM without watch-GEN.PL how without hand.GEN.PL]

‘Without my watch I am **like a person without hands**’.

**Comitative** indicates that a participant performs an action together with another participant or a group of participants and usually requires that both participants are animate: ID 1032 **VP za kompaniju (s NP-Ins)**

(51) *Pojd-ěš’ s nami za kompani-ju?*  
 [come-FUT.2SG with we.INS for company-ACC.SG]  
 ‘Will you come along **to keep us company?**’

**Possession** indicates that a participant possesses an object or, more rarely, a quality or a right:

ID 1946 **NP-Nom Cop/VP u NP-Gen na rukax**

(52) *Dokument-y u menja na ruk-ax.*  
 [document-NOM.PL at I.GEN on hand-LOC.PL]

‘**I have** the documents **in hand**’.

**Addressee** is understood as a hyperrole that includes not only the addressee of a speech event, but also the addressee of any non-verbal action. The action can affect the participant in a positive (Beneficiary) or negative (Maleficiary) way. The addressee of a speech event can be a single person (Core addressee) or a group of people (Audience):

- Core Addressee encodes a participant who receives a message from another participant: ID 752 **NP v adres NP-Gen**

(53) *V adres Van-i poslyša-l-i-s’ oskorbleni-ja.*

[in address.ACC.SG Vanja-GEN.SG hear-PST-PL-REFL insult-NOM.PL]  
 ‘Insults were made addressed to **Vanja**’.

- Audience encodes a group of people who receive a message: ID 585 **NP/VP pered NP-Ins**

(54) *On ume-l govori-t' pered bol'sh-oj*  
 [he.NOM can-PST.M speak-INF in\_front\_of big-F.INS.SG]

*publik-oj.*  
 audience-INS.SG]  
 ‘He knew how to speak **before a big audience**’.

- Beneficiary encodes an addressee who benefits from an action: ID 831 **NP/VP v ugodu NP-Dat**

(55) *On skaza-l èt-o v ugod-u načal'stv-u.*  
 [he.NOM say-PST.M this-N.ACC.SG in pleasure-ACC.SG boss-DAT.SG]  
 ‘He said that **in order to please** the leaders’.

- Maleficiary encodes a participant who is negatively affected by an event: ID 904 **VP nazlo NP-Dat**

(56) *Nazlo muž-u ona obreza-l-a svo-i*  
 [to.spite husband-DAT.SG she.NOM cut-PST-F own-ACC.PL]

*dlinn-ye volos-y.*  
 long-ACC.PL hair-ACC.PL]  
 ‘In order to irritate her husband, she cut off her long hair.’

**Non-standard subject** refers to various ways of encoding the logical subject of an action, either by non-standard marking of the subject or by denoting the substitution of the subject.

- Subject substitution refers to the deputy of the subject or indicates that an action is carried out by a participant other than the expected subject: ID 127 **VP za NP-Acc**

(57) *Mat' za doč' sdela-l-a domašn-ee*  
 [mother.NOM.SG for daughter.ACC.SG make-PST-F home-N.ACC.SG]

*zadani-e.*  
 assignment-ACC.SG]  
 ‘The mother did the homework for her daughter’.

- Non-standard subject marking is present when the subject is encoded in a way other than by the standard Nominative case: ID 389 **ja PronPers-Dat VP-Fut!**

(58) *Ja tebe poor-u!*  
 [I.NOM you.DAT shout-FUT.1SG]

‘If you keep screaming, you are going to get big trouble from me!’

**Logical relations** is the subclass presented in Figure 7. Constructions in this subclass refer to the relationship between events in terms of cause, purpose, consequence, condition, or concession.



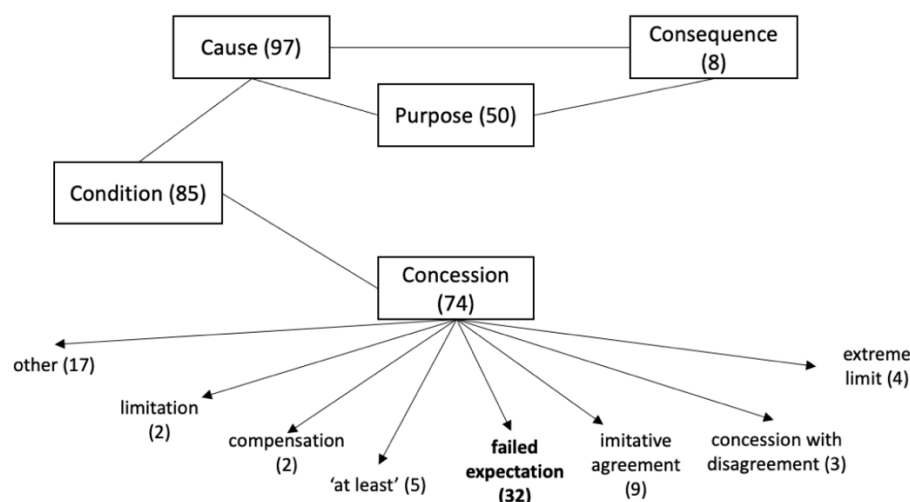


Figure 7: Logical relations subclass of semantic types.

**Cause** of an action: ID 1253 **VP ot NP-Gen**

- (59) *Nog-i drož-at ot strax-a.*  
 [leg-NOM.PL tremble-PRS.3PL from fear-GEN.SG]  
 ‘(Someone’s) legs are trembling **from** fear’.

**Purpose** of an action: ID 186 **na čto NP-Dat Cop NP-Nom?**

- (60) *Na čto mne èt-i knig-i?*  
 [on what.ACC I.DAT this-NOM.PL book-NOM.PL]  
 ‘What do I need these books **for**?’

**Consequence** of an action: ID 1627 **CI, vsledstvie čego CI**

- (61) *Den’g-i rasxodova-l-i-s’ neracional’no, vsledstvie*  
 [money-NOM.PL spend-PST-PL-REFL irrationally owing.to]  
  
*č-ego predprijati-e bystro razori-l-o-s’.*  
 what-GEN enterprise-NOM.SG quickly collapse-PST-N-REFL]  
 ‘Money was spent irrationally, **and as a result** the enterprise quickly collapsed’.

**Condition** for an action or situation: ID 286 **raz (už) CI, (to) CI**

- (62) *Raz už my vstreli-l-i-s’,*  
 [since PTCL we.NOM meet-PST-PL-REFL]  
  
*davaj-te obsud-im èt-u problem-u.*  
 give.IMP-PL discuss-FUT.1PL this-F.ACC.SG problem-ACC.SG]  
 ‘**Now that** we have met, let’s discuss this problem’.

**Concession** constructions counterpose two situations that are in conflict with each other such that one situation is deemed possible or happening in spite of the other adverse situation. We distinguish several subtypes of concession semantics following Apresjan 1999, among them Failed expectation: ID 2088 **Nesmotrja/Nevziraja na NP-Acc, CI**

- (63) *Nesmotrja na otzyv-y turist-ov, on*  
 [despite on review-ACC.PL tourist-GEN.PL he.NOM]  
  
*vsě ravno poexa-l v otel’.*

still equal go-PST.M to hotel.ACC.SG]  
 ‘Despite the reports from tourists, he stayed at this hotel anyway’.

**Properties**, presented in Figure 8, is a subclass of constructions that includes a multitude of subtypes that overlap in three semantic types: Salient Property, Temporary Characteristics, and Comparison.

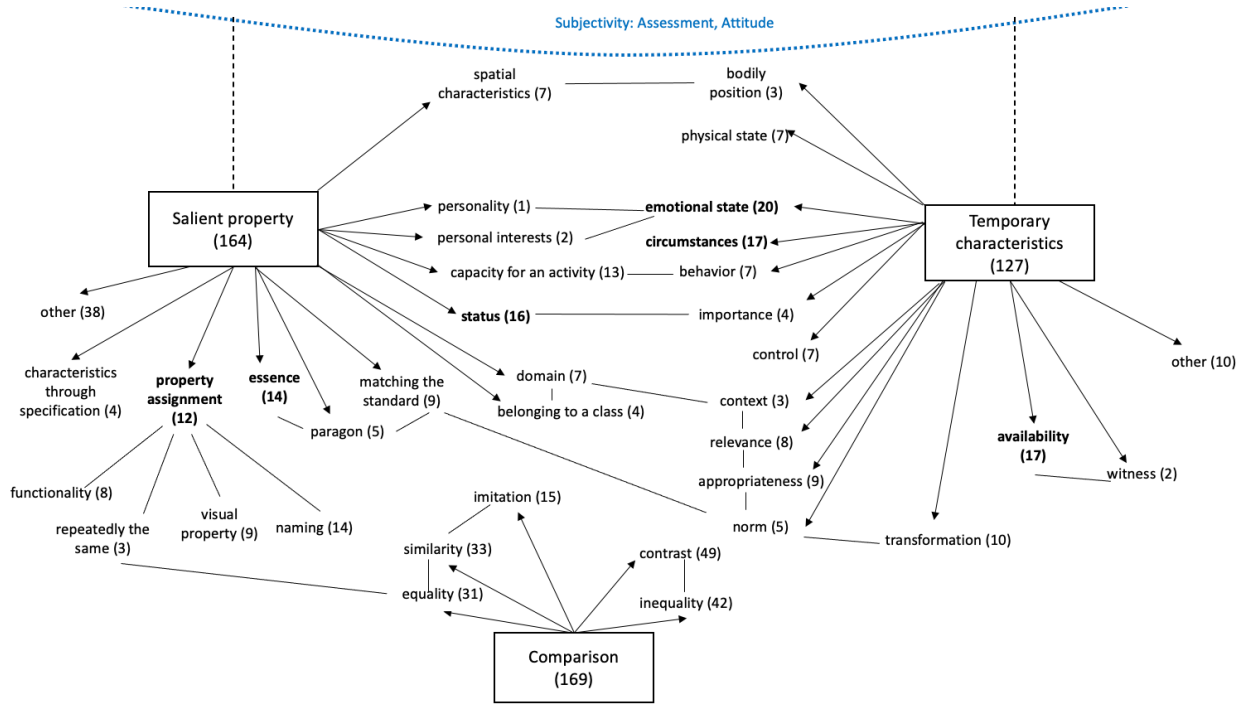


Figure 8: Properties subclass of semantic types

**Salient property** refers to core, prominent and usually constant characteristics of an object, a participant, or an action, with subtypes for Naming, Essence, Paragon, Personal interests, Belonging to a class, Domain, Functionality, etc. Here we illustrate Essence: ID 434 **Noun-Nom est' ~Noun-Nom**

(64) *Fakt est' fakt.*  
 [fact.NOM.SG be.PRS.3SG fact.NOM.SG]  
 ‘It’s just a fact’.

**Temporary characteristics** refer to non-constant characteristics that do not define the core nature of a participant, but rather describe external manifestations. Subtypes include Behavior, Physical state, Emotional state, Circumstances, Availability, etc. Availability refers to the presence and availability of an object or a participant: ID 1406 **VP (u vsex) na vidu**

(65) *On peresčita-l den'g-i u vs-ex na*  
 [he.NOM count-PST.M money-ACC.PL at all-GEN.PL on

*vid-u*  
 sight-LOC.SG]  
 ‘He counted the money again in plain sight for everyone’.

**Comparison** is understood as “evaluation of the degree of similarity or difference of two or more entities” (Treis 2018: 1). We distinguish between the subtypes of comparison normally discussed in typological works: Inequality and Equality (that together comprise quantitative

comparison), and Similarity (that is understood as qualitative comparison). We additionally recognize the subtype Imitation that encodes feigned, or pretended, similarity (compare the alternative term Simulation). Finally, we propose an additional subtype that we term Contrast that encodes semantic opposition of two entities and should not be confused with contrast in discourse.

- **Inequality** indicates that two entities are unequal with regard to a certain property, and that one entity is characterized by a larger or smaller degree of the property: ID 270 **po-Adj/Adv-Cmp**

(66) *K syn-u nado otnosi-t'-sja po-mjagč-e.*  
 [to son-DAT.SG needed treat-INF-REFL ATT-soft-CMP]  
 'You have to be **more gentle** with your son'.

- **Equality** indicates that two entities are identical with regard to a certain property: ID 322 **takoj že XP kak i NP**

(67) *Syn tak-oj že vysok-ij,*  
 [son.NOM.SG such-M.NOM.SG FOC tall-M.NOM.SG]  
  
*kak i otec.*  
 how and father.NOM.SG]  
 'The son is just **as tall as** the father'.

- **Similarity** indicates that two entities are similar with regard to a certain property: ID 1214 **NP/VP v stile NP-Gen**

(68) *istori-i v stil-e Andersena*  
 [story-NOM.PL in style-LOC.SG Andersen-GEN.SG]  
 'stories **following the style** of Andersen'.

- **Contrast** indicates a contrast between two entities with regard to a certain property: ID 788 **v otličie ot NP-Gen Cl**

(69) *V otliči-e ot Pet-i, Miš-a*  
 [in difference-ACC.SG from Petya-GEN.SG Misha-NOM.SG]  
  
*vsegda govori-l pravd-u.*  
 always tell-PST.M truth-ACC.SG]  
 'In contrast to Petja, Miša always told the truth'.

- **Imitation** refers to a feigned similarity of two entities: ID 271 **VP pod vidom NP-Gen**

(70) *Ona priexa-l-a v gorod pod vid-om*  
 [she.NOM come-PST-F to city.ACC.SG under guise-INS.SG]  
  
*turist-a.*  
 tourist-GEN.SG]  
 'She arrived in the city **in the guise of** a tourist'.

**Sets and elements** are presented in Figure 9. Constructions in this subclass contain information on the relationship between an element and a set. Quantification is the conceptual center of gravity for this subclass. Other semantic types in this subclass are “operators” that combine with simple quantifiers (from Quantification) to form complex quantifiers.

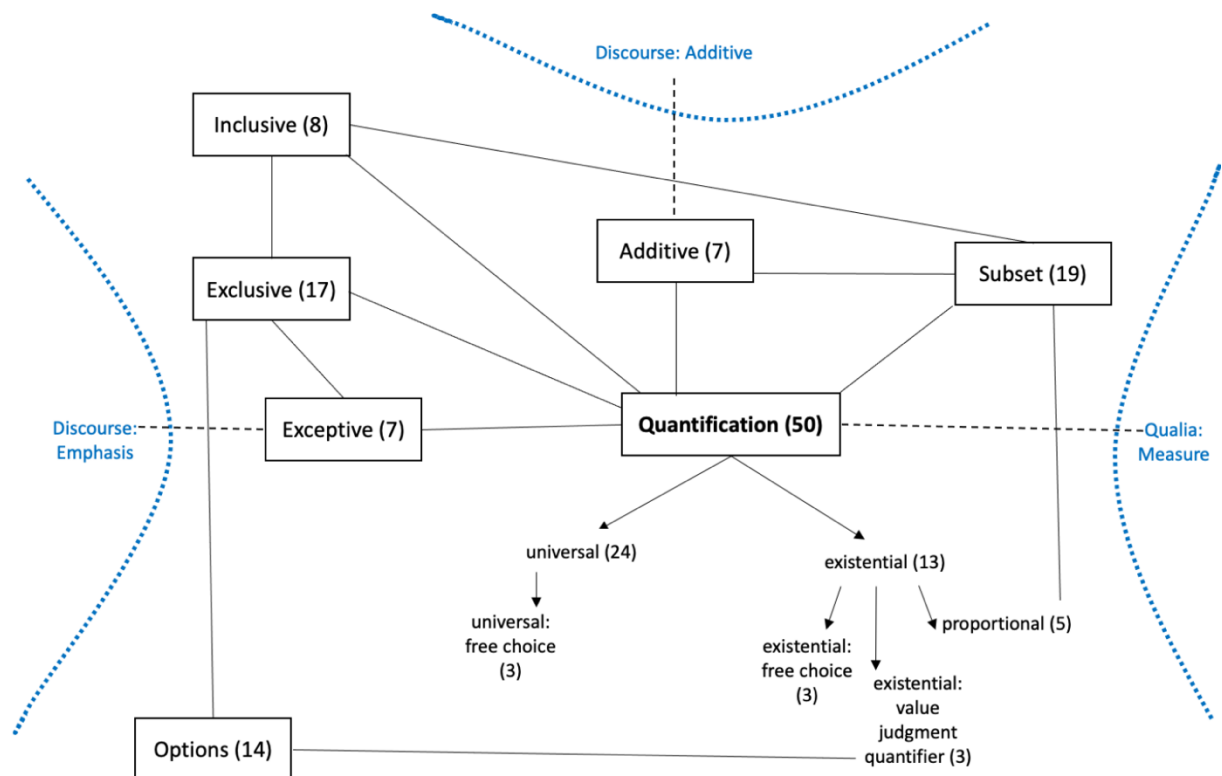


Figure 9: Sets and elements subclass of semantic types

**Quantification** constructions contain quantifiers; subtypes are based on Paperno 2012.

- Universal: ID 443 **(NP) vse do edinyj-Gen Cl**

(71) *Oni vs-e do edin-ogo prisutstvova-l-i*  
 [they.NOM all-NOM to single.one-GEN.SG be.present-PST-PL

*na sobrani-i.*

on meeting-LOC.SG]

‘**Absolutely everyone** was present at the meeting’.

- Existential: ID 1343 **VP raz i navsegda**

(72) *Zapomn-i èt-o raz i navsegda.*  
 [remember-IMP.SG this-N.ACC.SG time.ACC.SG and forever]

‘Commit this to memory **once and for all**’.

**Exceptive** indicates that an element is excluded from a set: ID 1902 **ne sčítaja NP-Gen Cl**

(73) *Troe v lodk-e, ne sčíta-ja sobak-i.*  
 [threesome in boat-LOC.SG NEG count-CVB dog-GEN.SG]

‘Three men in a boat, **to say nothing of** the dog’.

**Inclusive** indicates that an element is included in a set: ID 441 **NP, v tom čísl-e (i) NP**

(74) *Živ-ye suščestv-a, v tom čísl-e*  
 [living-NOM.PL creature-NOM.PL in that-LOC.SG.N number-LOC.SG

*i rasteni-ja, p’-jut vod-u.*

and plant-NOM.PL drink-PRS.3PL water-ACC.SG]

‘Living things, **among them also** plants, drink water’.

**Additive** indicates that physical objects are added to a set (as opposed to Discourse additive concerning adding information to what has already been said): ID 800 **VP v přidaču (k NP-Dat)**

- (75) *V přidač-u k medal-i on poluč-i-l*  
 [in addition-ACC.SG to medal-DAT.SG he.NOM receive-PST.M

*premi-ju.*

award-ACC.SG]

‘In addition to the medal he received an award’.

**Exclusive** indicates that an entity, participant, or action is viewed as the only one of its kind, encountered exclusively in a given situation: ID 197 **ne kto/čto inoj, kak NP**

- (76) *Èt-o by-l ne kto in-oj,*  
 [this-N.NOM.SG be-PST.M NEG who-NOM other- M.NOM.SG

*kak direktor škol-y.*

how director.NOM.SG school-GEN.SG]

‘It was **none other than** the director of the school’.

**Subset** refers to a hyperonym vs. hyponym relationship: ID 1077 **NP iz sredy NP-Gen**

- (77) *postojann-ye čitateľ-i iz sred-y učěn-yx*  
 [regular-NOM.PL reader-NOM.PL from sphere-GEN.SG scholar-GEN.PL]  
 ‘regular readers **from the scholarly community**’

**Options** indicates that several options exist and can occur in the situation: ID 351 **xot’ NP, xot’ NP**

- (78) *Pokupaj xot’ motocikl, xot’ mašin-u.*  
 [buy.IMP.SG any motorcycle.ACC.SG any car-ACC.SG]  
 ‘Buy **either** a motorcycle **or** a car’.

**Magnitude**, presented in Figure 10, includes three semantic types: Non-Existence, Measure, and Calculation.

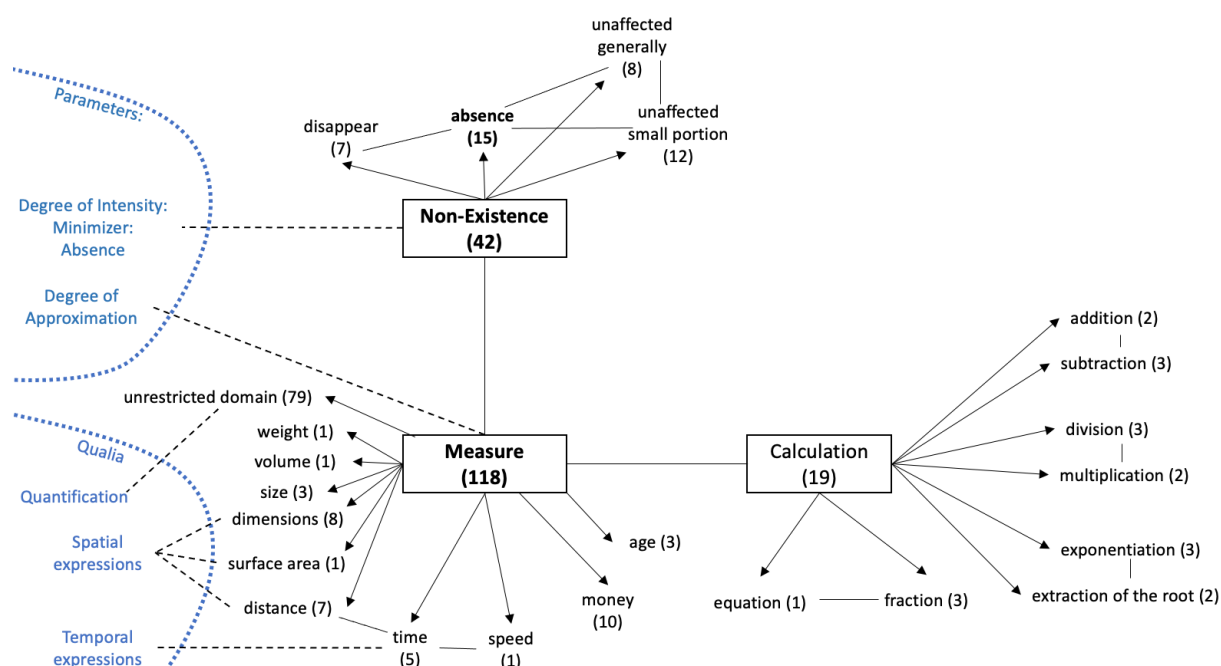


Figure 10: Magnitude subclass of semantic types.

**Non-Existence** constructions signify that an important component of a situation is absent, unaffected or disappears.

- Absence signifies that a component of a situation that is crucial for the speaker is absent (compare similar structures in English: *nothing to live for*; *nowhere to go*; *nothing to eat*; *no one to talk to*): ID 25 **(NP-Dat) VP-Inf Cop ničego**  
(79) *Es-t' by-l-o ne-č-ego.*  
[eat-INF be-PST-N NEG-what-GEN]  
'There was **nothing** to eat'.
- Unaffected generally signifies that an object is unaffected by an action: ID 239 **ničego ne VP**  
(80) *Vas-ja nič-ego ne e-l.*  
[Vasya-NOM.SG nothing-GEN NEG eat-PST.M]  
'Vasja didn't eat **anything**'.
- Unaffected small portion - The construction signifies that not even a single small portion of the object is affected by an action: ID 1159 **ni kroški ne VP**  
(81) *On tak i ne s'e-l ni krošk-i.*  
[he.NOM so and NEG eat-PST.M NEG crumb-GEN.SG]  
'He didn't eat **the least little bit**'.
- Disappear signifies that an object or a participant of the situation vanishes: ID 1002 **NP-Gen kak ne byvalo**  
(82) *Prostud-y kak ne byva-l-o.*  
[cold-GEN.SG how NEG be-PST-N]  
'The cold **disappeared without a trace**'.

**Measure** constructions encode the quantity of discrete objects, amount of substance, or values of quantified properties of objects such as size, length, volume, weight, age, etc. This type

includes constructions with numerals or other, non-conventional means of expressing amount or quantity.

- Volume is relevant for both the volume of a physical container or a metaphorical container of information, such as a book: ID 1546 **NP ob''ëmom (v) NumCrd NP**  
 (83) *knig-a ob''ëm-om v st-o stranic*  
 [book-NOM.SG volume-INS.SG in hundred-ACC page.GEN.PL]  
 ‘a book one hundred pages **long**’
- Weight: ID 55 **NP vesom/massoj (v) NumCrd NP**  
 (84) *barž-a ves-om v šest' tonn*  
 [barge-NOM.SG weight-INS.SG in six.ACC ton.GEN.PL]  
 ‘a **six-ton** barge’
- Size: ID 288 **NP (razmerom/veliĉinoj) s NP-Acc**  
 (85) *Sobak-a by-l-a razmer-om s lošad'.*  
 [dog-NOM.SG be-PST-F size-INS.SG as horse.ACC.SG]  
 ‘The dog was **the size of** a horse’.
- Age: ID 2271 **NP pod NumCrd-Acc (let)**  
 (86) *Ljudmil-e Petrovn-e pod pjat'desjat.*  
 [Ljudmila-DAT.SG Petrovna-DAT.SG under fifty.ACC]  
 ‘Ljudmila Petrovna is **approaching fifty**’.
- Money indicates prices and other amounts of money: ID 187 **VP na NumCrd-Acc rubl'**  
 (87) *Na st-o rubl-ej možno kupi-t'*  
 [on hundred-ACC ruble-GEN.PL possible buy-INF]  
  
*xleb i kolbas-u.*  
 bread.ACC.SG and sausage-ACC.SG]  
 ‘**For one hundred rubles** you can buy bread and a sausage’.
- Dimensions refer to various linear parameters (length, height, depth, radius, diameter): ID 1547 **NP dlinoj/širinoj/tolščinoj/vysotoj/glubinoj (v) NumCrd NP**  
 (88) *velodorožk-a dlin-oj šest' kilometr-ov*  
 [bike.path-NOM.SG length-INS.SG six.NOM kilometer-GEN.PL]  
 ‘a **six kilometer long** bike path’
- Other subtypes include: Surface area, Distance, Speed, Time, Unrestricted domain (constructions that are not limited to a single measurement parameter).

**Calculation** constructions encode various mathematical operations (addition, subtraction, division, multiplication, exponentiation, and extraction of a root) as well as equations and fractions. Here we illustrate with the Addition subtype: ID 1856 **NumCrd-Nom pljus/i NumCrd-Nom – (ravno/VP) NumCrd-Nom/NumCrd-Dat**

- (89) *Dv-a pljus dv-a ravn-o četyr-e.*  
 [two-NOM plus two-NOM equal-N.SHORT four-NOM]  
 ‘Two **plus** two **equals** four’.

## 4.2 The superordinate class “Modality and its neighborhood”



On the one hand, we adopt the traditional widely accepted narrow understanding of modality that refers to Root modality (Necessity, Possibility and Permission) and Epistemic modality (van der Auwera & Plungian 1998; Nuyts 2016). On the other hand, we consider categories closely related to modality as its “neighborhood”, among them Volition, Causation, Prohibition, Threat, Request, Apprehension, and Curse. This class overlaps with other classes: in particular, Actuality belongs to both Qualia and Modality and its neighborhood (“participant-internal possibility” according to van der Auwera & Plungian 1998); and Curse overlaps with Discourse. Figure 11 visualizes the semantic types and subtypes of Modality and its neighborhood.

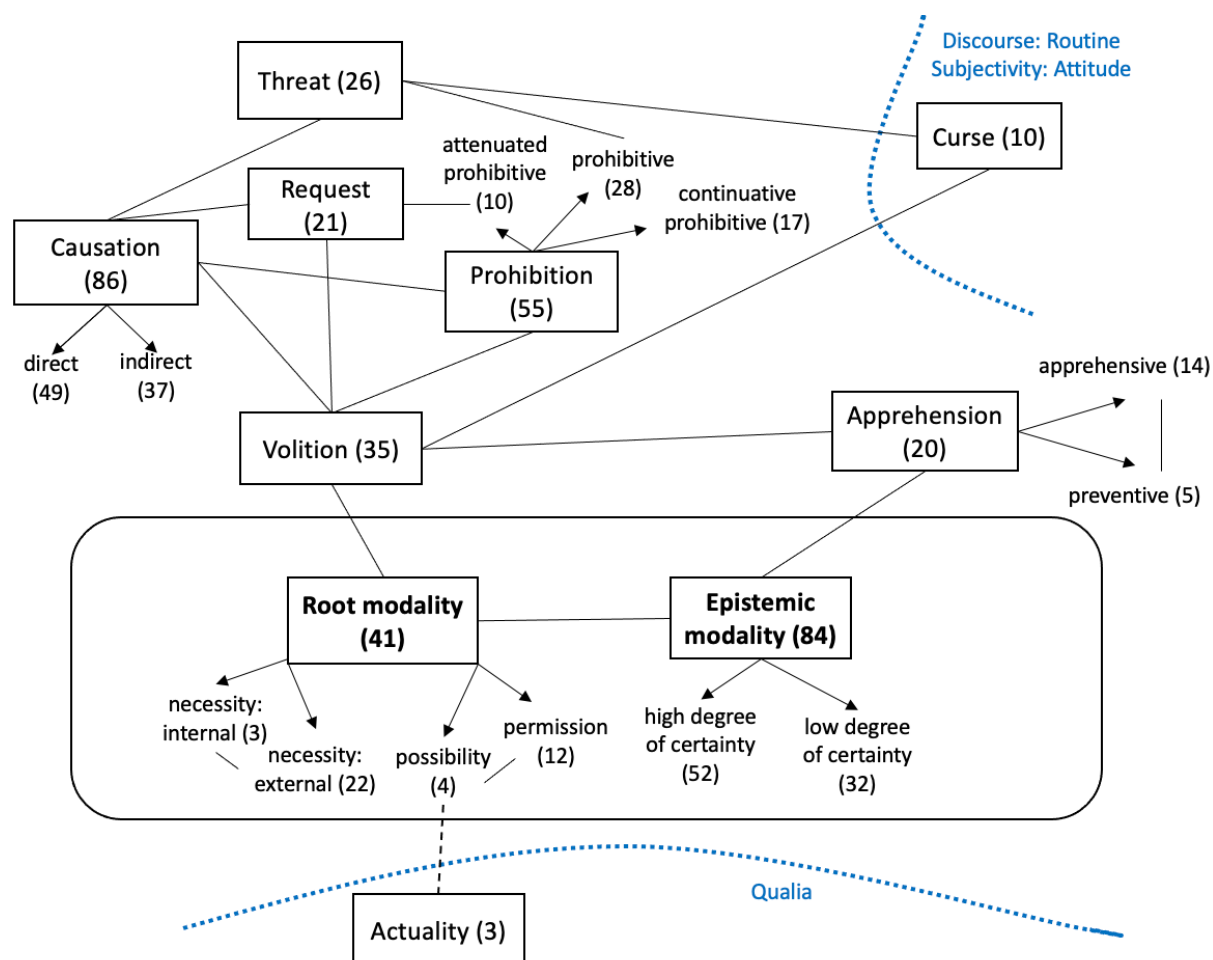


Figure 11: Superordinate class Modality and its neighborhood

**Root modality** includes necessity and possibility (van der Auwera & Plungian 1998; Nuyts 2016). For deontic participant-external possibility we use a separate tag Permission.

- Necessity: Internal refers to participant-internal necessity determined by the needs or qualities (e.g., character, personality) of the participant: ID 2117 **(NP-Dat) Cop nužnyj-Short/neobxodimyj-Short NP-Nom**  
 (90) *Mne nužn-a vaš-a podderžk-a.*  
 [I.DAT needed-F.SHORT your-F.NOM.SG support-NOM.SG]  
 ‘I need your support’.

- Necessity: External refers to necessity determined by the circumstances external to the participant and imposing a certain behavior: ID 281 **(NP-Dat) prišlos'/pridětsja VP-Inf**

(91) *Priš-l-o-s'*                      *vypi-t'*                      *lekarstv-o.*  
 [have.to-PST-N-REFL    drink-INF                      medicine-ACC.SG]  
 '(One) **had to** take the medicine'.

- Possibility (Nuyts 2016: 37) refers to a dynamic possibility that includes both participant-internal possibility, or ability (determined by the properties and capacities of the participant), and participant-external possibility (determined by the absence of obstacles for a situation): ID 481 **(NP-Dat) Cop možno VP-Inf**

(92) *Do*    *Moskv-y*            *iz*    *London-a*            *možno*    *dolete-t'*  
 [to    Moscow-GEN    from    London-GEN            possible    fly-INF  
  
*za*            *četyr-e*            *čas-a*  
 behind    four-ACC            hour-GEN.SG]  
 'It is **possible** to fly to Moscow from London in four hours'.

- Permission refers to deontic external possibility, i.e., permission to perform an action or the speaker's request for such permission: ID 2110 **ne strašno/ničego, esli CI?**

(93) *Ne*    *strašno,*    *esli*    *ja*            *zakur-ju?*  
 [NEG    terrible    if    I.NOM    smoke-FUT.1SG]  
 'Would it be terrible if I lit up a cigarette?'

**Epistemic modality** conforms to the concept of Nuyts (2016: 38) in understanding epistemic modality as an estimation of "the likelihood that the state of affairs expressed in the clause applies in the world". Therefore, epistemic modality indicates the degree of confidence in a proposition, typically from the perspective of the speaker (Boye 2016: 117).

- High degree of certainty: ID 2130 **zub daju, čto CI**

(94) *Zub*                      *da-ju,*                      *čto*    *nikto*                      *v*    *komnat-u*  
 [tooth.ACC.SG            give-PRS.1SG            that    nobody.NOM            in    room-ACC.SG  
  
*ne*                      *zaxodi-l.*  
 NEG                      enter-PST.M]  
 'If there was anyone who entered the room, **I'll eat my hat**'.

- Low degree of certainty, used when a situation is assessed as uncertain or improbable: ID 76 **vrode (kak) XP/CI**

(95) *On*                      *vrode*    *kak*    *id-ët.*  
 [he.NOM    like            how    walk-PRS.3SG]  
 'He is **allegedly** on his way'.

**Volition** indicates a desire or a wish on the part either of the speaker (optative) or of another participant of a situation (desiderative): ID 879 **vot by (NP-Dat) (nikogda ne/vsegda) VP-Inf!**

(96) *Vot*    *by*                      *nikogda*                      *ne*                      *rabota-t'!*  
 [here    COND                      never                      NEG                      work-INF]  
 'Wouldn't it be great if we **never** had to work!'

**Causation** has a broad sense of “encouragement to perform an action”. This does not necessarily entail the involvement of an additional participant (as would be expected from the grammatical term “causative”).

- Direct expresses direct causation to perform an action (primarily by means of imperative forms): ID 96 **davaj(te) VP-Fut.1.Pl!**  
 (97) *Davaj-te pojd-ëm v kino!*  
 [give.IMP-PL go-FUT.1PL to cinema.ACC.SG]  
 ‘Let’s go to the cinema!’.
- Indirect expresses implicit or covert causation to perform an action (for example, in the form of a question): ID 147 **kak nasčët XP?**  
 (98) *Kak nasčët vypi-t’?*  
 [how about drink-INF]  
 ‘How about having a drink?’.

**Prohibition** can be standard (Prohibitive), Continuative, and Attenuated prohibitive (Rakhilina 2013).

- Prohibitive expresses strict prohibition to perform an action in the future: ID 231 **ni slova NP-Dat o NP-Loc!**  
 (99) *Ni slov-a mam-e o naš-ej*  
 [NEG word-GEN.SG mother-DAT.SG about our-F.LOC.SG]  
  
*poezdk-e!*  
 trip-LOC.SG]  
 ‘Not a word to mom about our trip!’.
- Continuative prohibitive expresses encouragement to stop an ongoing action: ID 1247 **xoroš VP-Ipfv.Inf!**  
 (100) *Ëj, naverxu! Xoroš pryg-a-t’!*  
 [hey upstairs good.M.SHORT jump-IPFV-INF]  
 ‘Hey you upstairs! That’s enough jumping!’.
- Attenuated prohibitive is a milder, less categorical injunction against performing a future or ongoing action: ID 202 **(NP-Dat) ne stoit VP-Ipfv.Inf**  
 (101) *Ne sto-it razgovariva-t’ s nim.*  
 [NEG worth-PRS.3SG talk-INF with he.INS]  
 ‘There’s no point talking with him’.

**Threat** constructions are used by a speaker to condemn an action that is performed or can potentially be performed by the interlocutor or another participant of the situation. It is implied that the speaker can punish them if they do not obey (Letuchiy 2007): ID 389 **ja PronPers-Dat VP-Fut!**

- (102) *Ja tebe poor-u!*  
 [I.NOM you.DAT shout-FUT.1SG]  
 ‘If you keep screaming, you are going to get big trouble from me!’

**Request** constructions convey a speaker’s request to perform an action: ID 218 **nel’zja li Cop VP-Inf?**

- (103) *Nel’zja li sdela-t’ muzyk-u potiš-e?*  
 [prohibited PTCL make-INF music-ACC.SG quiet-CMP]

‘Can’t you make the music a little quieter?’

**Apprehension** expresses concern or warning regarding an “undesirable situation that the speaker deems possible and wants to avoid” (Baydina 2016). The speaker is afraid that this situation can take place (Apprehensive sub-type) and/or urges the interlocutor to perform an action that would help to avoid this situation (Preventive sub-type) (Dobrushina 2006).

- Apprehensive: ID 1099 **((Ja) bojus’,) kak by ne VP-Pfv.Pst**

(104) *Kak by Miš-a ne opozda-l!*  
[how COND Misha-NOM NEG be.late-PFV.PST.M]  
‘If only Miša would not be late!’

- Preventive: ID 309 **smotret’-Imp, (ne) VP-Imp**

(105) *Smotr-i-te, ne opozdaj-te!*  
[watch-IMP-PL NEG be.late.IMP-PL]  
‘Watch out, don’t be late!’

**Curse** is a type of Routine construction that overlaps with the Discourse superordinate class. Routine constructions are fixed formulaic phrases used in typical communicative contexts (greetings, partings, apologies, etc.). Curse constructions invoke destruction or damage to the interlocutor or another participant of the situation: ID 2024 **čtob NP-Dat pusto bylo**

(106) *I voobščē, ubiraj-te-s’ so svo-imi*  
[and generally get.out.IMP-PL-REFL with own-INS.PL  
*sovet-ami. Čtob vam vs-em pusto byl-o!*  
advice-INS.PL in.order you.DAT.PL all-DAT.PL empty be-PST.N]  
‘And just get out of here with your advice. **To heck with you!**’

**Actuality** is on the periphery of Modality and in the intersection with Qualia: ID 1676 **u NP-Gen polučilos’ VP-Pfv.Inf**

(107) *U menja v pervye polučil-o-s’*  
[at I.GEN for.the.first.time manage-PST-N-REFL  
*priexa-t’ vovremja.*  
PFV.arrive-INF in.time]  
‘This is the first time that I **managed** to arrive on time’.

### 4.3 The superordinate class “Subjectivity”

Subjectivity is a large class of constructions that are intensively interconnected both with other superordinate classes and internally.<sup>3</sup> As visualized in Figure 12, Assessment, Attitude and Polarity value are at the center of gravity of this superordinate class, with Source of opinion and Mirative at the periphery.

<sup>3</sup>A prior description of Assessment and Attitude constructions (Endresen & Janda 2020) was based on a smaller sample of data. Since then, about 200 more constructions have been added to the Russian Constructicon, resulting in increases in some numbers.

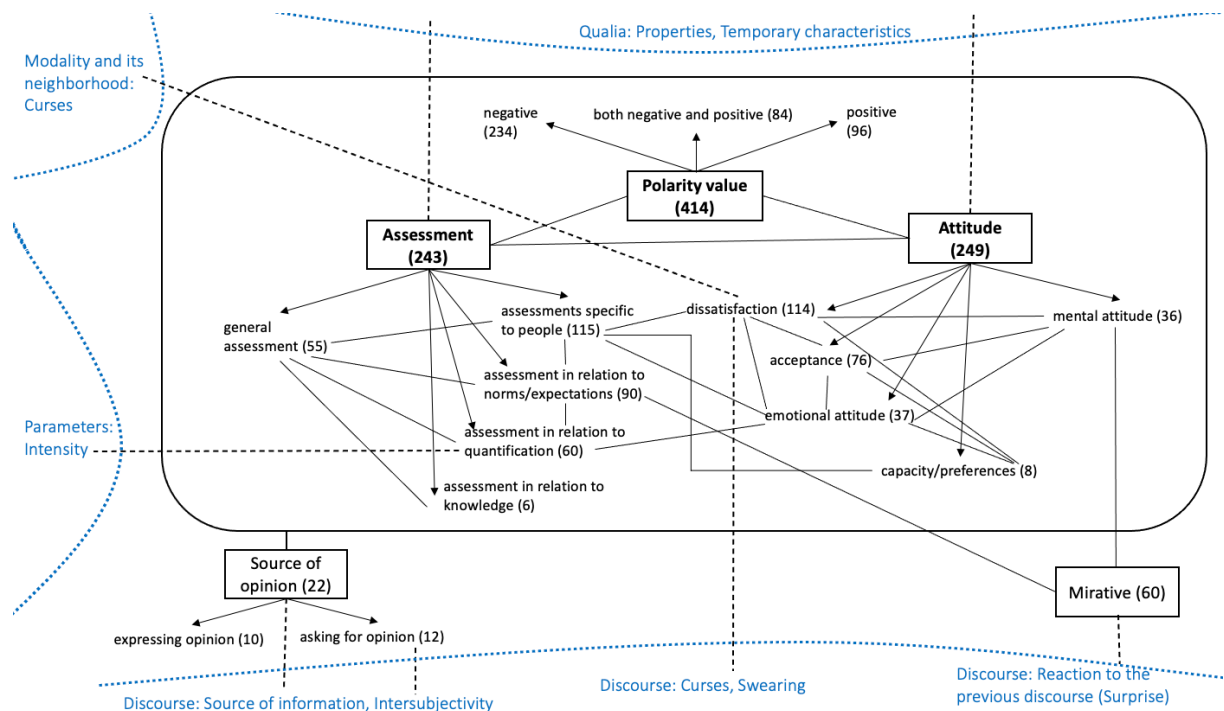


Figure 12: The superordinate class Subjectivity

The most complex internal relationship is between Assessment and Attitude. Assessment expresses evaluation of an item external to the speaker, such as a physical object, animate participant in a situation, or a situation itself. Attitude refers to the evaluation of the speaker's internal state of mind or internal emotional approach taken towards a situation. Attitude constructions express how the speaker feels about something, what standpoint he or she takes, what the speaker's personal perspective on a subject or a situation is. Assessment and Attitude are thus very closely related, and there are many constructions that are identified with both of these general semantic tags in the Russian Constructicon. The overlapping types are in the center of Figure 12 and connected to both Assessment and Attitude, whereas the types that are specific to each are on the left and right periphery. All Assessment and Attitude constructions present positive or negative Polarity value. Within Assessment, General assessment can be contrasted to a variety of specific kinds of assessment. Within Attitude, Mental attitude can be contrasted with Emotional attitude, and Dissatisfaction and Acceptance emerge as salient types of Emotional attitude. The Mental attitude cluster contains a family of constructions that encode the attitude of surprisal that is closely related to Mirative. Source of opinion constructions predominantly introduce Assessment statements.

**Polarity value** specifies whether a construction carries positive or negative evaluation. We observe that the negative polarity value is expressed much more often than the positive one.

- Positive (assessment or attitude): ID 242 **NP-Nom Cop (NP-Nom) ničego (takoj-Nom)**  
 (108) *Professor on by-l nič-ego.*  
 [professor.NOM.SG he.NOM be-PST.M nothing-GEN]  
 'He was **quite ok** as a professor'.
- Negative (assessment or attitude): ID 294 **s PronPers-Gen xvatit/xvatilo (NP-Gen)!**  
 (109) *S menja xvat-it!*

[from I.GEN enough-FUT.3SG]  
 ‘I’ve had **enough!**’.

- Both Negative and Positive are relevant for constructions that can carry either positive or negative evaluation (assessment or attitude) depending on the fillers, possibility of negation, or a broader context: ID 2246 **na redkost’ Adj/Adv**

(110) *Na redkost’ prosto*  
 [on rarity.ACC simple]  
 ‘Unusually simple’.

**Assessment** is an evaluation of something external to the speaker.

- General Assessment expresses an overall evaluation of an object by approaching it as a whole, usually expressed by adjectives meaning ‘good’ or ‘bad’ and their synonyms: ID 2160 **NP-Nom Cop xorošij-Short/ploxo-Short NP-Ins**

(111) *Èt-i mest-a xoroš-i svo-imi les-ami!*  
 [this-NOM.PL place-NOM.PL good-SHORT.PL own-INS.PL forest-INS.PL]  
 ‘These places **are good** because of their forests’.

- Assessment specific to people, such as intellectual capacities, behavior, power, appearance, emotional state, etc.: ID 1433 **u NP-Gen NP-Nom xromat’**

(112) *U brat-a sil’no xroma-et geografi-ja.*  
 [at brother-GEN.SG strongly limp-PRS.3SG geography-NOM.SG]  
 ‘My brother is **really weak in** geography’.

- Assessment in relation to norms and expectations. In these constructions, the speaker compares the evaluated item to their idealized model of the world that functions as a standard: ID 631 **VP kak sleduet**

(113) *On rabota-l kak sledu-et.*  
 [he.NOM work-PST.M how ought.to-PRS.3SG]  
 ‘He worked **as he should**’.

- Assessment in relation to quantification refers to a certain degree, or quantity, of a property along a scale with values such as: none, little, some/enough, a lot, and beyond the limit: ID 2258 **VP/Adj sverx mery**

(114) *On odar-ën sverx mer-y.*  
 [he.NOM give-PTCP.PASS.M.SHORT beyond measure-GEN.SG]  
 ‘He is talented **beyond measure**’.

- Assessment in relation to knowledge evaluates an object, a participant, time, or space depending on whether they are known or unknown to the speaker: ID 35 **bog vest’ PronInt**

(115) *Oni prines-l-i v paket-e bog*  
 [they.NOM bring-PST-PL in bag-LOC.SG god.NOM.SG]  
  
*vest’ čto.*  
 know.PRS.3SG what.ACC]  
 ‘**God only knows what** they brought in the bag’

**Attitude** constructions refer to the evaluation of the speaker's internal state of mind or internal emotional approach taken towards a situation. These constructions express how the speaker feels about something, what standpoint he or she takes, what the speaker's personal perspective on a subject or a situation is.

- Emotional Attitude of the speaker towards a situation, naming specific emotional attitudes, referring to strong uncontrolled emotions, or emphasizing the depth or scope of a feeling: ID 491 **NP-Dat Noun-Nom Cop ne (v) ~Noun (bez NP-Gen)**

(116) *Devočk-am radost' ne v radost'.*  
[girl-DAT.PL joy.NOM.SG NEG in joy.ACC.SG]  
'For the girls their **joy was not real rejoicing**'.

- Acceptance indicates the degree to which the speaker accepts a situation, supports an idea, is willing or unwilling to perform an action, expresses concern or unconcern, reconciliation, remorse, etc.: ID 671 **XP tak ~XP**

(117) *Sup tak sup.*  
[soup-NOM.SG so soup-NOM.SG]  
'**If I should** eat the soup, **I will do so**'.

- Dissatisfaction indicates that the speaker is dissatisfied with another participant, their actions or the entire situation on a scale from mild Discontent to strong Disapproval to Swearing to Curse: ID 337 **(NP-Dat) tol'ko NP-Gen (eščě) ne xvatalo!**

(118) *Tol'ko dožd-ja ne xvata-l-o!*  
[only rain-GEN.SG NEG enough-PST-N]  
'Rain was all we needed **to make our misery complete!**'

- Capacity and Preferences indicates attitude motivated by the capacities or preferences of the speaker, triggering an attitude of feeling comfortable or uncomfortable with a certain activity: ID 1134 **NP-Nom Cop s NP-Ins na "vy"**

(119) *Ja s texnik-oj na "vy".*  
[I.NOM with technology-INS.SG on you.NOM]  
'I am **not friends** with technical equipment'.

- Mental Attitude is motivated by the speaker's knowledge or expectations, encoding skepticism, confidence, perplexity, or mirativity: ID 289 **rasskazyvaj/rasskazyvajte, CI**

(120) *Rasskazyvaj, ne by-l-o deneg!*  
[tell.IMP.SG NEG be-PST-N money.GEN.PL]  
'**How can you tell me that** there wasn't any money!'

**Source of opinion** constructions refer to the author of an opinion.

- Expressing opinion indexes an opinion to a participant: ID 1137 **na PronPoss-Acc vzgljad, CI**

(121) *Na moj vzgljad, èt-o ne iskusstv-o.*  
[on my.M.ACC.SG opinion.ACC.SG this-N.NOM.SG NEG art-NOM.SG]  
'**In my opinion**, that is not art'.

- Asking for opinion invites a participant to voice their opinion: ID 2339 **PronPers-Nom ne naxodit', čto CI?**



- (122) *Vy ne naxod-ite, čto èt-o nemnogo*  
 [you.NOM NEG find-PRS.2PL that this-N.NOM.SG a.little  
*strann-o?*  
 strange-N.SHORT]  
 ‘Don’t you find that a little strange?’

**Mirative** is a cluster of constructions that partially overlaps with a family of Attitude constructions expressing the speaker’s surprisal with new unexpected information (DeLancey 1997; Aikhenvald 2012): ID 61 **NP-Nom voz’mi i VP-Pfv.Imp.Sg**

- (123) *A on voz’m-i i kup-i nov-uju mašin-u!*  
 [and he.NOM take-IMP.SG and buy-IMP.SG new-F.ACC.SG car-ACC.SG]  
 ‘And he (suddenly, unexpectedly) bought a new car!’.

#### 4.4 The superordinate class “Discourse”

Discourse is written and spoken communication that features the speaker and his/her interlocutor as key participants. In the Russian Constructicon, we identify a large class of constructions that function at the discourse level, visualized in Figure 13. These constructions structure the text, organize the communication, and often refer to a broader context than a single sentence.

Discourse organization constructions (left side of Figure 13), include the constructions that organize the communication process, usually by adding optional commentary in the form of parentheticals inserted or added to the main content of the clause. Here we distinguish between Discourse structure constructions and Source of information constructions.

Discourse clauses (right side of Figure 13) require us to take the broader context of communication into account, rather than just the sentence hosting a construction. Here we distinguish between the constructions that express Reaction to the previous discourse and Routine constructions used in stereotypical personal interactions (greetings, congratulations, etc.).

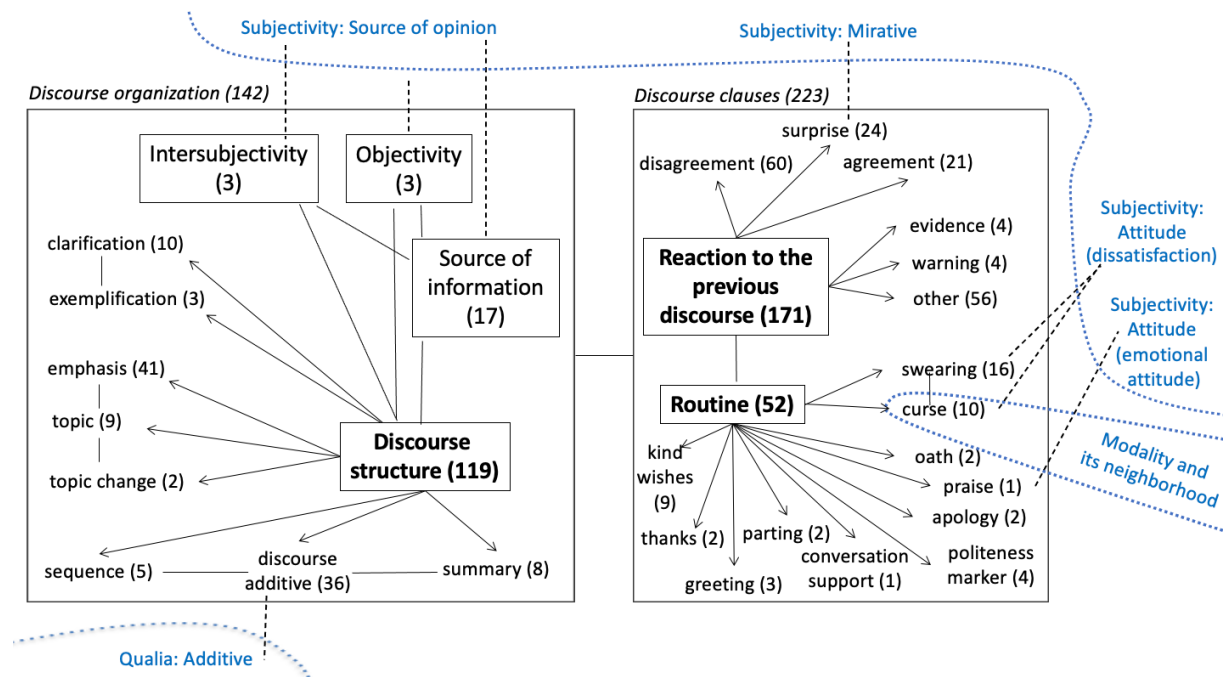


Figure 13: The superordinate class Discourse

**Discourse structure** constructions are used to organize discourse, for example by itemizing points in an argument or a narrative, introducing new information, summarizing one's message, switching to a new topic, providing an illustrative example, or explaining a concept. We illustrate only Clarification here: ID 1835 **XP/CI, ili, skoree, XP/CI**

- (124) *I togda ja ponja-l ili, skoree, vspomni-l,*  
 [and then I.NOM understand-PST.M or rather remember-PST.M  
*čto èt-o ne Son-ja.*  
 that this-N.NOM.SG NEG Sonja-NOM]  
 'And then I understood, **or rather**, remembered that it isn't Sonja.'

**Source of information** indicates where given information originates: ID 132 **NP-Nom znat' NP-Acc po NP-Dat**

- (125) *On zna-l aktër-a po fil'm-am.*  
 [he.NOM know-PST.M actor-ACC.SG along film-DAT.PL]  
 'He **knew the actor from** (his) films'.

**Intersubjectivity** refers to a common standard, often idiomatic, way of naming something and thus appeals to a larger community of speakers (Nuyts 2005: 14): ID 1120 **tak skazat', XP**

- (126) *Èt-o odin iz t-ex fil'm-ov,*  
 [this-N.NOM.SG one.M.NOM.SG from that-GEN.PL film-GEN.PL  
*kotor-ye, tak skaza-t', na vek-a.*  
 which-NOM.PL so say-INF on century-ACC.PL]  
 'It was one of those films which, **as they say**, are eternal'.

**Objectivity** is present when the speaker presents some information as accurate facts well-known to many people, and thus objectivizes the content of the message: ID 141 **kak izvestno, CI**

- (127) *Kak izvestno, on master stix-i sočinja-t'*  
 [how known he.NOM.SG master.NOM.SG poetry-ACC.PL compose-INF]  
 'As is well known, he is a master of poetic composition'.

**Reaction to the previous discourse** constructions show how the speaker reacts to a statement of the interlocutor or the speaker's own previous statements. Such constructions also occur when presenting the inner monologue of the speaker. We illustrate only some of the subtypes here. Other subtypes distinguished in the Russian Constructicon include Accentuation, Doubt, Insight, Irrelevance.

- Surprise: ID 152 **kak èto XP/CI?**

- (128) *Kak èt-o on ne pried-et?*  
 [how this-N.NOM.SG he.NOM NEG come-FUT.3SG]  
 'What do you mean, he's not coming?'

- Disagreement: ID 159 **kakoj (tam) NP!**

- (129) *Kak-ie šutk-i, zdes' vs-ě ser'ězn-o!*  
 [which-NOM.PL joke-NOM.PL here everything-N.NOM.SG serious-N.SHORT]  
 'I am not joking, this is serious!'

- Agreement ID 1815 **Nu, razumeetsja, XP!**

- (130) – *Krepk-ie napitk-i on ne ljub-it.*  
 [strong-ACC.PL drink-ACC.PL he.NOM NEG like-PRS.3SG]

– *Nu, razume-et-sja, ne ljub-it.*  
 well be.sure-PRS.3SG-REFL NEG like-PRS.3SG]  
 '–He doesn't like strong drinks. –Well, of course he doesn't.'

- Self-evidence: ID 330 **tó-to CI**

- (131) *Ne zavtraka-l. To-to ja xoč-u es-t'!*  
 [NEG have.breakfast-PST.M that-that I.NOM want-PRS.1SG eat-INF]  
 'I didn't eat breakfast. It stands to reason that I am hungry!'

- Warning: ID 1811 **i (tol'ko) ne govori potom, čto CI**

- (132) *I ne govor-i potom, čto ja tebj-a ne*  
 [and NEG say-IMP.SG later that I.NOM you.ACC NEG]

*preduprežda-l-a!*  
 warn-PST-F]  
 'Don't say later on that I didn't warn you!'

**Routines** are fixed formulaic phrases used in typical communicative contexts (greetings, partings, apologies, etc.). Here we illustrate only a few subtypes.

- Apology: ID 2083 **Prošu proščeni-ja za NP-Acc/za to, čto CI**

- (133) *Proš-u proščeni-ja za opozdani-e.*  
 [ask-PRS.1SG forgiveness-GEN.SG for being.late-ACC.SG]  
 'I ask forgiveness for being late'.

- Politeness marker, e.g. ID 2336 **ja by PronPers-Acc poprosil (ne) VP-Inf**

- (134) *Ja by poprosi-l ne ruga-t'-sja pri det-jax*

[I.NOM COND ask-PST.M NEG argue-INF-REFL near child-LOC.PL]  
 ‘I **would like to ask** you **not to** curse in the presence of the children’.

- Oath, e.g. ID 2301 **CI, čestnoe slovo**

(135) *Ja ne xote-l-a vas obide-t’, čestn-oe*  
 [I.NOM NEG want-PST-F you.ACC offend-INF honest-N.ACC.SG]

*slov-o!*

word-ACC.SG]

‘I **honestly** didn’t mean to offend you!’.

- Praise, e.g. ID 2312 **Slava NP-Dat, (čto) CI**

(136) *Slav-a bog-u, viž-u prekrasno i*  
 [praise-NOM.SG god-DAT.SG see-PRS.1SG well and]

*vs-ě*

*slyš-u*

everything-N.ACC.SG hear-PRS.1SG]

‘**Thank God**, I see well and hear everything’.

#### 4.5 The superordinate class “Parameters”

Parameters express meanings of intensity and accuracy that can combine with many other meanings (for example, temporal, spatial, or quantitative semantics, etc.). Parameters imply a certain scale (of intensity or accuracy) that serves as a point of reference for a property or a situation characterized by a construction. In Figure 14 the vertical axis represents the Degree of Intensity on the left and the Degree of Accuracy on the right; in both cases higher degrees are at the top and these decrease toward the lower end of the Figure. The Approximator (Degree of Intensity) and Approximate (Degree of Accuracy) subtypes are conceptually related to each other as they convey a similar meaning. Parameters overlap with many more types from other superordinate classes (Manner, Measure, Result, Time, Assessment etc.) than can be reflected in Figure 14 (without making it entirely unreadable). In Figure 14 we represent only the relationships of Maximizer and Minimizer to the most salient overlapping meanings within Qualia and Modality and its neighborhood.

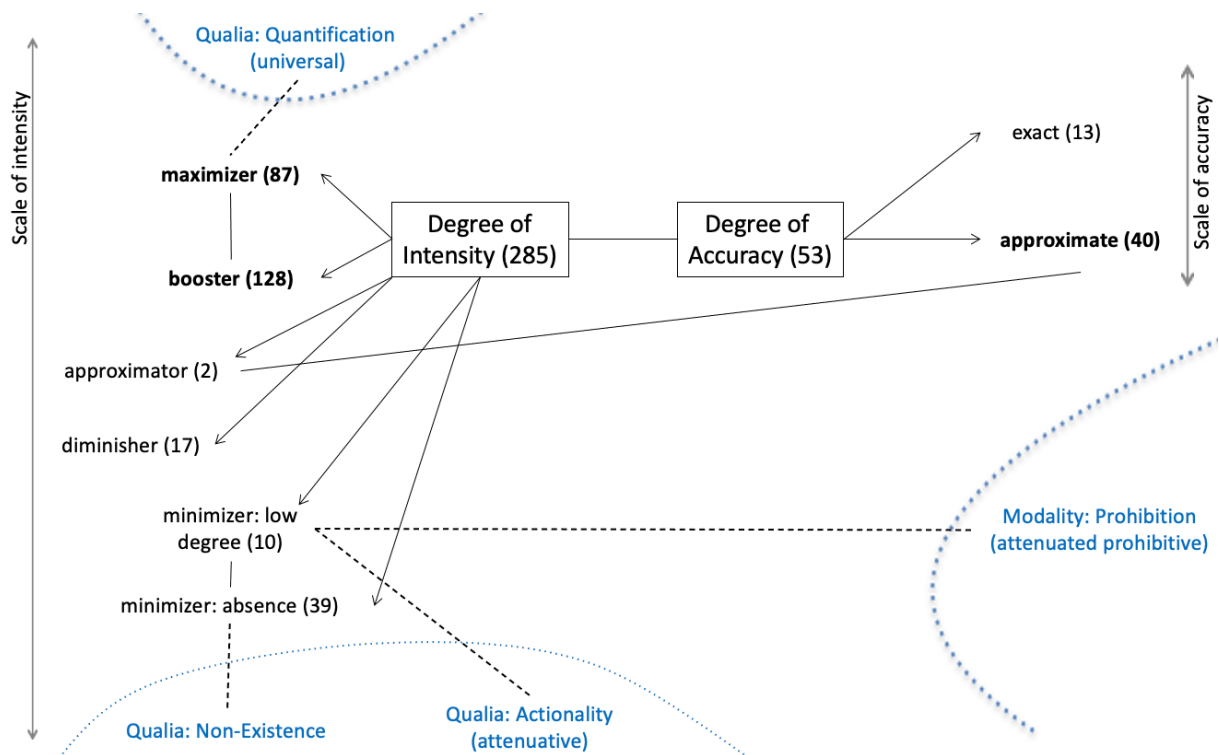


Figure 14: The superordinate class Parameters

**Degree of Intensity** is expressed by “any device that scales a quality, whether up or down or somewhere between the two”. Degree of intensity is an indication of “a point on an abstractly conceived intensity scale; and the point indicated may be relatively low or relatively high” (Quirk et al. 1985: 589). Distinctions among subtypes of intensifiers proposed in Quirk et al. (1985: 589) are applied to Russian constructions in Zhukova 2020.

- Minimizer: Absence emphasizes that a quality or an action is totally absent or not available to any extent: ID 1452 **ni na gramm ne VP**  
 (137) *Ona èt-omu ton-u ni na gramm ne*  
 [she.NOM this-M.DAT.SG tone-DAT.SG NEG on gram.ACC.SG NEG  
*ver-it.*  
 believe-PRS.3SG]  
 ‘She doesn’t have **one whit of** faith in that tone’.
- Minimizer: Low degree indicates a very small degree of intensity or a quantity that is very small. The construction does not deny that an action took place but rather downgrades it: ID 1463 **s trudom VP**  
 (138) *Ja s trud-om veri-l ego rasskaz-u.*  
 [I.NOM with labor-INS.SG believe-PST.M his story-DAT.SG]  
 ‘I found it **difficult to** believe his story’.
- Diminisher emphasizes that a quality or an action is present or performed to a small extent or incompletely, but to a larger degree of intensity than Minimizer: ID 205 **ne takoj už i Adj**  
 (139) *On ne tak-oj už i strašn-yj*  
 [he.NOM NEG such-M.NOM.SG PTCL and scary-M.NOM.SG]  
 ‘He is not so terrible **after all**’.

- Approximator expresses “an approximation to the force of the verb, while indicating that the verb concerned expresses more than is relevant” (Quirk et al. 1985: 597): ID 1685 **počti/praktičeski XP**

(140) *My počti priexa-l-i: osta-l-o-s' vsego dv-e*  
 [we.NOM almost arrive-PST-PL leave-PST-N-REFL just two-F.NOM]

*ostanovk-i.*

stop-GEN.SG]

‘We are **almost** there, only two more stops’.

- Booster indicates a high degree of intensity in relation to qualities that can potentially increase infinitely: ID 1234 **VP ne v primer Adj-Cmp/Adv-Cmp**

(141) *On vygljade-l ne v primer prijatn-ee.*  
 [he.NOM look-PST.M NEG in example.ACC.SG nice-CMP]

‘He looked **vastly** nicer’.

- Maximizer indicates the top extreme of an intensity scale and that the quality cannot be increased further or that the action has reached its limit: ID 150 **kak nel’zja Adv-Cmp VP**

(142) *Porošok kak nel’zja lučše otstira-l žirn-ye*  
 [powder.NOM.SG how impossible good.CMP wash-PST.M grease-ACC.PL]

*pjatn-a*

stain-ACC.PL]

‘The detergent absolutely could not have washed out the grease stains **any better**’.

**Degree of Accuracy** states the degree to which the result of a measurement corresponds to the correct value or a standard.

- Exact refers to an exact number of objects, exact time, or perfectly suitable size: ID 1370 **(v) akkurat VP**

(143) *Žd-i menja, i ja vern-u-s' v akkurat*  
 [wait-IMP.SG I.ACC and I.NOM return-FUT.1SG-REFL in exactly]

*k obed-u.*

to lunch-DAT.SG]

‘Wait for me and I will return **just in time** for dinner’.

- Approximate indicates that the number of objects is approximate or that the situation does not entirely correspond to its definition: ID 496 **NP-Gen.PI NumCrd**

(144) *Na lekcii-ju priš-l-i čelovek dvadcat’.*  
 [on lecture-ACC.SG come-PST-PL person.GEN.PL twenty.NOM]

‘**Around** twenty people came to the lecture’.

## 5. Conclusions

We present a semantic classification that has co-evolved with the Russian Constructicon in a delicate balance between the aim of Cognitive Linguistics to analyze all constructions and languages in their own terms and the semantic categories independently established cross-linguistically. This evolution took place over a period of five years, conducted by a diverse international team in recurrent cycles to safeguard against idiosyncratic or unreproducible

analyses. The process was initially characterized by continual upheaval and reorganization, which gradually gave way to less and less disruptive fine-tuning, stabilizing when a critical mass of over one thousand constructions was reached. Thereafter expansion of the database was very rapid and smooth, yielding few and minor perturbations in the classification. The development of this classification system is at once bottom-up, in that patterns emerged directly from the data, and top-down, in that emergent patterns have consistently been validated against typological observations where relevant. The result is a robust classification that can likely accommodate unlimited further expansion with little adaptation. Although this classification is language-specific, the typological grounding of this system gives us reason to expect that it could be adapted to the classification of constructions of other languages.

The result is a system of semantic tags that range from superordinate classes, subclasses, and then general semantic types that represent networks of constructions. These networks are further classified into clusters and families of constructions. This system is furthermore interwoven by the fact that all constructions can bear multiple semantic tags, revealing lateral relations across constructions and various aggregates of constructions at all levels of organization. Throughout the system we find partially overlapping radial category structures.

The semantic classification system is publicly available on the website of the Russian Constructicon, where it is also possible to search for every semantic type and subtype and find constructions with full annotation for their meanings and many other parameters. Both the data and architecture are hosted on GitHub, where all researchers may access, re-use, and adapt our classification to the needs of their languages.

The semantic classification system of the Russian Constructicon has numerous implications both for Construction Grammar and for cross-linguistic comparison of grammatical constructions. This large database makes it possible to investigate what distinctions are relevant within various semantic categories. We can ask, for example, what kind of layering of meanings do we find within Prohibitive or Degree of intensity constructions and discover very specific items that indicate which meanings are cognitively relevant and thus supplied with distinctive means of expression. Cross-linguistically the Russian Constructicon can serve as a point of departure for examining the various phenomena that characterize families and larger groupings of constructions, such as metaphORIZATION, use of particles and other lexemes as anchor words, different types of semantic shifts, and quasi-grammaticalization. This typological investigation can be carried out both within and beyond the Slavic language family, revealing cross-linguistic trends and mechanisms of constructionalization.

We can now offer answers to the three questions posed in the Introduction:

- 1) *What are the major types of meanings that multi-word grammatical constructions can encode?*

The Russian Constructicon resource shows a table of all the major semantic types at this link: <https://constructicon.github.io/russian/semantic-types/>.

- 2) *What semantic types of constructions are attested more often than others?*

The quantitative distribution of semantic types is dynamically represented by a bar graph at this link: <https://constructicon.github.io/russian/statistics/>. Furthermore, the interaction of these types with syntactic types are also available.

- 3) *Do various types of constructional meanings form a coherent system?*

Yes. Figures 4-14 show the multilevel systematic connections both within and across classes.



The main theoretical contribution of this article is that we present the first attempt to model the system of an entire language on a large scale in terms of Construction Grammar. Our classification can be tested further against data from other languages, especially those that are structurally very different from Russian. Our semantic classification has emerged from the data and represents an alternative to Semantic Frames (Fillmore et al. 2012) and Comparative Concepts (Croft 2016). The deliberate design of our architecture and software to be portable across languages promotes cross-linguistic comparisons, thus promoting the field of constructicography. The Russian Constructicon is also a contribution to practical description and to language pedagogy (see the *Construxercise!* resource created for teaching Russian as a second language: <https://constructicon.github.io/construxercise-rus/index.html>). Because our annotation is based on Universal Dependencies standards, our data can be mined and further exploited for Natural Language Processing applications, such as computational experiments and automatic translation apps.

## References

- Aijmer, K. (2004). The semantic path from modality to aspect: *Be able to* in a cross-linguistic perspective. In: H. Lindquist & C. Mair (Eds.). *Corpus approaches to grammaticalization in English* (pp. 57–78). Amsterdam / Philadelphia: John Benjamins.
- Aikhenvald, A. (2012). The essence of mirativity. *Linguistic Typology*, 16, 435–485.
- Apresjan, Ju. D. (1974/1995). *Leksičeskaja semantika* [Lexical semantics]. Moskva: Jazyki russkoj kul'tury.
- Apresjan, V. Ju. (1999). Ustupitel'nost' v jazyke i slova so značenijem ustupki [Concession in language and the words that designate concession]. *Voprosy jazykoznanija*, 5, 24–44.
- Barðdal, J., Smithermana, T., Bjarnadóttir, V., Danesia, S., Jensen, G. B. & McGillivray, B. (2012). Reconstructing Constructional Semantics: The Dative Subject Construction in Old Norse-Icelandic, Latin, Ancient Greek, Old Russian and Old Lithuanian. *Studies in Language*, 36(3), 511–547.
- Baydina, E. (2016). *The Russian apprehensive construction: Syntactic status reassessed, negation vindicated*. Leiden: Leiden University, MA Thesis. <https://hdl.handle.net/1887/46284>
- Boas, H. C., Dux, R. & Ziem, A. (2016). Frames and constructions in an online learner's dictionary of German. In S. De Knop & G. Guilquin (Eds.), *Applied Construction Grammar* (pp. 303–326). Berlin/Boston: de Gruyter.
- Bondarko, Vladimir A. (1984). *Funkcional'naja grammatika* [Functional grammar]. Leningrad: Nauka.
- Boye, K. (2016). The expression of epistemic modality. In J. Nuyts & J. van der Auwera (Eds.). *The Oxford Handbook of Modality and Mood* (pp. 117–140). Oxford: Oxford University Press.
- Chvany, C. V. (1998). Vid kak čast' universal'nogo nabora semantičeskix priznakov [Aspect as part of universal set of semantic features]. In M. Ju. Čertkova (Ed.) *Tipologija vida: problemy, poiski, rešenija* [Typology of aspect: problems, investigations, solutions] (pp. 490–497). Moskva: Jazyki slavjanskoj kul'tury.
- Comrie, B. (1976). *Aspect: An introduction to the study of verbal aspect and related problems*. Cambridge: Cambridge University Press.
- Comrie, B., Haspelmath, M., Bickel, B. (2008). The Leipzig Glossing Rules: Conventions for interlinear morpheme-by-morpheme glosses. Max Planck Institute for Evolutional Anthropology. <https://www.eva.mpg.de/lingua/resources/glossing-rules.php>
- Croft, William. (2016). Comparative concepts and language-specific categories: Theory and practice. *Linguistic Typology*, 20, 377–393. 10.1515/lingty-2016-0012.

- DeLancey, S. (1997). Mirativity: The grammatical marking of unexpected information. *Linguistic Typology*, 1, 33–52.
- Dik, S. C. (1989). *The theory of functional grammar. Part I: The structure of the clause*. Dordrecht: Foris.
- Dobrushina, N. R. (2006). Grammatičeskie formy i konstrukcii so značeniem opasenija i preodstereženija [Grammatical forms and constructions with the meaning of fear and caution]. *Voprosy jazykoznanija*, 2, 28–67.
- Ehrlemaek, A., Johansson, R., Lyngfelt, B. Retrieving Occurrences of Grammatical Constructions. (2016). *Proceedings of COLING 2016, the 26th International Conference on Computational Linguistics: Technical Papers*. Osaka, Japan, 2016, 815–824.
- Endresen, A., Janda, L. A., V. Zhukova, D. Mordashova, E. Rakhilina. Forthc. Turning a list into a network via family-based expansion of the Russian Constructicon. In A. Ziem, A. Willich, S. Michel (Eds.), *Constructing Constructicons*. CAL series, Amsterdam: John Benjamins.
- Endresen, A. & Janda, L. A. (2020). Taking Construction Grammar one step further: Families, clusters, and networks of evaluative constructions in Russian. In M. Putnam, M. Carlson, A. Fábregas & E. Wittenberg (Eds.), *Defining Construction: Insights into the Emergence and Generation of Linguistic Representations* [special issue of *Frontiers in Psychology*, 11] (pp. 1–22).
- Fillmore, Ch. J, Lee-Goldman, R. & Rhodes, R. (2012). The FrameNet constructicon. In H. C. Boas & I.A. Sag (Eds.), *Sign-based construction grammar*, *CSLI Publications* (pp. 309–372). Stanford, CA.
- Fillmore, Ch. J. (1988). The Mechanisms of “Construction Grammar”. In *Proceedings of the Fourteenth Annual Meeting of the Berkeley Linguistics Society*, 35–55.
- Fillmore, Ch. J. & Atkins, B. T. (1992). Toward a Frame-Based Lexicon: The Semantics of RISK and Its Neighbors. In A. Lehrer & E. Kittay (Eds.), *Frames, Fields, and Contrast: New Essays in Semantics and Lexical Organization* (pp. 75–102). Hillsdale, NJ: Lawrence Erlbaum.
- Fillmore, Ch. J., Kay, P., & O’Connor, M. C. (1988). Regularity and idiomaticity in grammatical constructions: The case of *let alone*. *Language*, 64(3), 501–538.
- Goldberg, A. E. (2006). *Constructions at work: The nature of generalizations in language*. Oxford: Oxford University Press.
- Goldberg, A. E. & Herbst, T. (2021). The *nice-of-you* construction and its fragments. *Linguistics*, 59(1), 285–318.
- Jackendoff, R. (1983). *Semantics and cognition*. Cambridge, MA: MIT.
- Jackendoff, R. (2002). *Foundations of language: Brain, meaning, grammar, evolution*. Oxford: Oxford University Press.
- Jakobson, R. (1957). *Shifters, verbal categories and the Russian verb*. Cambridge, MA: Harvard University Press.
- Janda, L. A., Endresen, A., Zhukova, V., Mordashova, D., & Rakhilina, E. (2020). How to build a constructicon in five years: The Russian Example. In F. Brisard, T. Coleman, A. De Wit, R. Enghels, N. Koutsoukos, T. Mortelmans & M. Sol Sansiñena (Eds.), *The wealth and breadth of construction-based research* [special issue of *Belgian Journal of Linguistics*, 34] (pp. 162–175).
- Janda, L. A. & S. J. Clancy. (2002). *The Case Book for Russian*. Bloomington, IN: Slavica Publishers.
- Janda, L. A., Kopotev, M. & Nessel, T. (2020). Constructions, their families and their neighborhoods: the case of *durak durakom* ‘a fool times two’. *Russian Linguistics*, 44, 109–127.

- Jespersen, O. (1924). *The Philosophy of Grammar*. London: G. Allen and Unwin. Reprinted in 2010 by Routledge.
- Khrakovski, V. S. (2003). Kategorija taksisa (Obščaja xarakteristika) [The category of taxis (General characteristics)]. *Voprosy jazykoznanija*, 2, 33–54.
- Khrakovski, V. S. (2009). Taksis: Semantika, sintaksis, tipologija [Taxis: semantics, syntax, typology]. In V. S. Khrakovski (Ed.). *Tipologija taksisnyx konstrukcij* [The typology of taxis constructions] (pp. 11–113). Moskva: Znak.
- Kibisova, E. (2020). How do we measure “measure”? Measure constructions and metaphor. *Poljarnyj vestnik*, 23, 1–17.
- Klavan, J. & Veismann, A. (2017). Are corpus-based predictions mirrored in the preferential choices and ratings of native speakers? Predicting the alternation between the Estonian adessive case and the adposition peal ‘on’. *Eesti ja soome-ugri keeleteaduse ajakiri. Journal of Estonian and Finno-Ugric Linguistics*, 8(2), 59–91.
- Ladygina, A. S. & Rakhilina, E. V. (2016). Russkie konstrukcii so značeniem čeredovanija situacij [Russian constructions encoding the meaning of alternating situations] In M. V. Ljapon (Ed.). *Jazyk: poiski, fakty, gipotezy* [Language: investigations, facts, hypotheses] (pp. 320–336). Moskva: Leksrus.
- Langacker, R. W. (2008). *Cognitive Grammar: A basic introduction*. Oxford: Oxford University Press.
- Letuchiy, A. B. (2007). Russkij “ugrozativ” i ego rodstvenniki [Russian construction of threat and its relatives]. *Komp’juternaja lingvistika i intellektual’nye texnologii* [Computational Linguistics and Intellectual Technologies], 375–381. <http://www.dialog-21.ru/media/1878/57.pdf>
- Lyngfelt, B. (2018). Introduction: Constructicons and constructicography. In B. Lyngfelt, L. Borin, K. Ohara & T. T. Torrent (Eds.), *Constructicography: Constructicon development across languages* (pp. 1–18). Amsterdam: John Benjamins.
- Lyngfelt, B., Borin, L., Ohara, K. & Torrent, T. T. (Eds.) (2018). *Constructicography: Constructicon development across languages*. Amsterdam: John Benjamins.
- Mel’čuk, I. A. (1998). *Kurs obščej morfologii. T. II. Part 2: Morfologičeskie značeniya* [A course in general morphology, Vol. 2, Part 2: Morphological meanings]. Moskva: Jazyki slavjanskoj kul’tury; Wien: Wiener Slavistischer Almanach.
- Mitrofanova, N. (2016). *Paths and Places: Aspects of Grammar and Acquisition. Doctoral dissertation*. UiT: The Arctic University of Norway. <https://munin.uit.no/handle/10037/11250>
- Newman, P. (1980). *Nominal and Verbal Plurality in Chadic*. Berlin: Walter de Gruyter.
- Nida, E. (1949). *Morphology: The descriptive analysis of words*. Ann Arbor: University of Michigan Press.
- Nuyts, J. (2016). Analyses of modal meanings. In J. Nuyts & J. van der Auwera (Eds.). *The Oxford Handbook of Modality and Mood* (pp. 31–49). Oxford: Oxford University Press.
- Ohara, K. H. (2018). Relations between frames and constructions: A proposal from the Japanese FrameNet constructicon. In B. Lyngfelt, L. Borin, K. Ohara, T. T. Torrent (Eds.), *Constructicography: Constructicon development across languages* (pp. 141–164). Amsterdam: John Benjamins.
- Oskol’skaja, S. A., Zaika, N. M., Klimenko, S. B. & Fedotov, M. L. (2020). Opređenje karitiva kak sravnitel’nogo ponjatija [Defining caritive as a comparative concept]. *Voprosy jazykoznanija* (3), 7–25.
- Paperno, D. (2012). Quantification in Standard Russian. In: E. L. Keenan, D. Paperno (Eds.). *Handbook of quantifiers in natural language* (pp. 729–780). Dordrecht: Springer.
- Plungian, V. A. (2001). Antirezul’tativ: do i posle rezul’tata [Antiresultative: before and after the result]. In V. A. Plungian (Ed.). *Issledovanija po teorii grammatiki* [Studies in

- theoretical grammar], Vol. 1: *Grammatičeskie kategorii* [Grammatical categories] (pp. 50–88). Moskva: Russkie slovari.
- Plungian, V. A. (2011). *Vvedenie v grammatičeskiju semantiku: Grammatičeskie značeniya i grammatičeskie sistemy jazykov mira* [An introduction to grammatical semantics: Grammatical meanings and grammatical systems in the languages of the world]. Moscow: Russian State University for the Humanities Press.
- Plungian, V.A. (1999). A typology of phasal meanings. In W. Abraham, L. Kulikov, L. (Eds.). *Tense-aspect, transitivity, and causativity: Essays in honor of Vladimir Nedjalkov* (pp. 311–321). Amsterdam: John Benjamins.
- Rakhilina, E. V. & Li, S. H. (2009). Semantika leksičeskoj množestvennosti v russkom jazyke [Semantics of lexical plurality in Russian]. *Voprosy jazykoznanija*, 4. 13–40.
- Rakhilina, E. V. (Ed.). (2010). *Lingvistika konstrukcij* [Linguistics of constructions]. Moscow: Azbukovnik.
- Rakhilina, E. V. (2013). Konduktor, nažmi na tormoza... [Conductor, press the brakes...]. *Komp'juternaja lingvistika i intellektual'nye texnologii* [Computational Linguistics and Intellectual Technologies], 12(19), 665-673.
- Quirk, R., Greenbaum, S., Leech, G. & Svartvik, J. (1985). *A Comprehensive Grammar of the English Language*. London: Longman.
- Shluinsky, A. B. (2005). *Tipologija predikatnoj množestvennosti: količestvennye aspektual'nye značeniya* [A typology of pluractionality: quantitative aspectual meanings]. PhD dissertation, Moscow State University. [https://iling-ran.ru/Shluinsky/ashl/TipologijaPredikatnoj\\_2005\\_disser.pdf](https://iling-ran.ru/Shluinsky/ashl/TipologijaPredikatnoj_2005_disser.pdf)
- Talmy, L. (1985). Lexicalization patterns: semantic structure in lexical forms. In T. Shopen. (Ed.). *Language typology and syntactic description. Vol. III: Grammatical categories and the lexicon* (pp. 36–149). Cambridge: Cambridge U. Press.
- Talmy, L. (2000). Lexicalization patterns, Surveying lexicalization patterns. In L. Talmy (Ed.). *Towards a cognitive semantics. Vol. II: Typology and process in concept structuring* (pp. 21–212). Cambridge, MA: MIT.
- Torrent, T. T., Lage, L. M., Sampaio, T. F., Tavares, T. S. & Matos, E. E. (2014). Revisiting border conflicts between FrameNet and Construction Grammar: Annotation policies for the Brazilian Portuguese Constructicon. *Constructions and Frames*, 6, 34–51.
- Traugott, E. C. & Trousdale, G. (2013) *Constructionalization and constructional changes*. Oxford: Oxford University Press.
- Treis, Y. (2018). Comparative Constructions: An Introduction. *Linguistic Discovery*, 16(1), i–xxvi.
- van der Auwera, J. & Plungian, V. (1998). Modality's Semantic Map. *Linguistic Typology*, 2, 79–124.
- Zaliznjak, A. A. & Šmelev, A. D. (2000). *Vvedenie v russkiju aspektologiju* [Introduction to the Russian aspectology]. Moskva: Jazyki russkoj kul'tury.
- Zhukova, V. (2020). *Intensifying constructions in Russian based on data from Russian Constructicon*. Moscow: National Research University Higher School of Economics, MA Thesis.

## Acknowledgments

This work was supported by the Norwegian Agency for International Cooperation and Quality Enhancement in Higher Education (HK-Dir, <https://hkdir.no>, grant CPRU-2017/10027), the Ministry of Science and Higher Education of the Russian Federation (Agreement No 075-15-2020-793; 2021), and the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (grant NRF-2021S1A5A2A03065528). We are grateful to

Vladimir Plungian for his detailed feedback on the earlier versions of our semantic classification. We thank UiT The Arctic University of Norway for their support of our research.

### **Postal and email addresses for all authors**

Laura A. Janda  
UiT The Arctic University of Norway  
Department of Language and Culture  
Hansine Hansens veg 18  
N-9037 Tromsø  
NORWAY  
[laura.janda@uit.no](mailto:laura.janda@uit.no)

Anna Endresen  
UiT The Arctic University of Norway  
Department of Language and Culture  
Hansine Hansens veg 18  
N-9037 Tromsø  
NORWAY  
[anna.endresen@uit.no](mailto:anna.endresen@uit.no)

Valentina Zhukova  
UiT The Arctic University of Norway  
Department of Language and Culture  
Hansine Hansens veg 18  
N-9037 Tromsø  
NORWAY  
[valentina.zh96@gmail.com](mailto:valentina.zh96@gmail.com)

Daria Mordashova  
Lomonosov Moscow State University  
1 Leninskie Gory  
119991 Moscow  
RUSSIA  
- and -  
Institute of Linguistics, Russian Academy of Sciences  
Minority Language Research and Preservation Lab  
1 bld. 1 Bolshoy Kislovsky Lane  
125009 Moscow  
RUSSIA  
[mordashova.d@yandex.ru](mailto:mordashova.d@yandex.ru)

Ekaterina Rakhilina  
National Research University Higher School of Economics  
School of Linguistics  
Staraya Basmannaya ulica, 21  
103066 Moscow  
RUSSIA  
[rakhilina@gmail.com](mailto:rakhilina@gmail.com)

