The Essex Database of Russian Verbs and their Nominalizations

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Abstract

We describe the structure and contents of a relational database of some eight thousand Russian verbs and their nominalizations. The table of verbs contains information about morphosyntactic class, subcategorization, aspect and other grammatical properties as well as a listing of the argument structure and semantic properties. The table of verbs contains information about morphosyntax, including subcategorization and argument structure and distinguishes those entries which nominalize the whole event and which preserve some or all of the verb's argument structure from those which denote a concrete or abstract result of the verb. The keys for all entries in the two tables are cross-linked by a third table which permits an extremely wide range of queries to be run over the data, allowing researchers to investigate a whole host of questions concerning the morphology, syntax and semantics of deverbal nominalizations.

1. Introduction

This is a brief description of the chief characteristics of the Russian Nominalizations database which has been constructed as part of ESRC Project R000236115. The database was written in MicroSoft Access 2.0 converted to Access95. The original design of the database was by Andrew Bredenkamp with design modifications by John Gregory. Further details of the design of the current version can be found in the documentation file.

This document describes the linguistic basis for the database and its entries. We assume a basic understanding of the structure of Russian grammar. The database consists of three parts, a table of verb entries, a table of nominalizations, and a table of Noun-Verb Links, linking the primary keys (Identifier field) of the nouns and verbs entries. By writing queries of varying sophistication it is possible to determine various facts about the structure of Russian verbs and their associated nominalizations. For example, we can ask which verbs of a particular semantic type give rise to nominalizations with a particular kind of argument structure, or we can ask which verbs of a given conjugational class give nominalizations ending in a particular suffix with a particular type of meaning or with particular grammatical properties, or we may ask which verbs derived from a given elementary verb have dual nominalizations of the same semantic kind but realized by different morphological means (e.g. different suffixes).

We have listed over 7 000 verbs and 5 000 nominalizations. The semantic analysis embodied in the database owes a good deal to the recent work of Paducheva (1996) and her colleagues and the somewhat differently organized Leksikograf database which they are constructing (see Kustova and Paducheva, 1994). In addition to differences in organization, we have concentrated on a rather different set of verbs from the Moscow group. Thus, we have devoted very little attention to verbs of motion, speech act verbs and verbs of mentation ('belief/desire' verbs such as claiming that, wishing that, and so on), while these classes have been the focus of a number of studies in Moscow. On the other hand, we have been directing our attention to a variety of classes and phenomena

which the Moscow group has yet to deal with. The Moscow group has not investigated deverbal nominalizations systematically at all, and does not include such information in its database.

The Verbs part of the database contains information about the morphology and grammatical properties of the verb, including aspect, its prefix(es) and the basic verb it is derived from if it is non-simplex, its root, its subcategorization and its predicate-argument structure (PAS), expressed as a grid of semantic roles (Agent, Theme and so on). In addition, we record various features of its semantics, in terms of the overall situation type (event class) of the verb, whether it is controlled by an agent, and whether it expresses a particular mode of action (sposob dejstvija, Aktionsart). We also note the nominalization of the verb. The lexicographic details are taken from MAS, the Slovar' Sinonimov and informant judgements.

The nominalizations database includes information about the morphology and grammatical properties of the nominal, together with certain information about the verb(s) from which it is derived. The nominalization is assigned to one of a small number of semantic categories (based on the typology of nominalizations in Grimshaw 1990). We also record the PAS and the change in PAS with respect to the base verb as well as subcategorization information.

The database contains a fair amount of information which is strictly speaking redundant. For instance, virtually all verbs marked 'perfective aspect' will belong to Semantic Type 1 'Achievement', given the taxonomy of ontological types we have adopted. This redundancy aids the writing of queries considerably, since it makes it possible to access information (such as Situation Type) much more straightforwardly.

The database must be regarded as work in progress. We are continually adding new entries, or more sophisticated versions of old entries and as a result a number of fields for some entries are not filled or are only partially filled. Unfilled cells in the datasheets are indicated by '?', which indicates either that we have not decided on a value yet or that it poses other difficulties. Where there are data points that we simply haven't (yet) filled in we have denoted these with a double backslash \\. We intend to introduce more complex semantic categories as we delve into the semantics of verbs and nominalizations in greater detail. However, the overall structure of the database is likely to remain essentially the same for the foreseeable future.

2. Overview of the database

Throughout the sign '-' means that a given entry has no specific value for that field, except in the field 'Control' where it denotes a negative feature value [Control:-]).

The Russian data are written in a transparent transliteration system. For technical reasons we use diagraphs to convey a number of the letters of the Cyrillic alphabet. These are

ch - ч, sh - ш, shch - щ, zh - ж
\e - э, ju - ю, ja - я

y is always the vowel ы, j is always part of a digraph before the vowels a, u, elsewhere represent 'i kratkoe' й. Hard sign ъ = ", soft sign ь = '. The sign > before a vowel indicates stress (for homographs differentiated solely by stress). We do not transcribe e+diaresis (ë).

In the verbs table we include the following information:

Identifier — A unique integer for each entry. Links between a verb and its nominalizations and vice versa are mediated through the Identifier.

Verb — The infinitive form of the verb, with an integer distinguishing homophones or polysemous senses.

Gloss — A translation into English (for earlier entries) or a dictionary definition in Russian. (We are in the process of replacing earlier English glosses with Russian ones, as part of our plans to develop a purely Russian language version of the database.)

Notes — Miscellaneous information, e.g. about register (colloquial, technical, etc.), examples of usage for more complex entries and so on.

Nominalization — A list of the nominalization(s) given by the verb.

Aspect — Basic imperfective verbs are marked 'impf', perfective verbs are marked 'pf', secondary imperfectives are marked '2impf'. Derived perfectives are '2pf' and biaspectual verbs are marked 'impf/pf'.

Aspectual pair — (For aspectually paired verbs only) The verb of the opposite aspect.

Sit Type 1 — Primary situation type (Paducheva 1996) using the typology of Smith (1991).

Sit Type 2 — Secondary situation type. This category is based on the work of Paducheva and her group, which is undergoing continual revision. We have restricted ourselves to a specific subset of secondary types. In this column we distinguish, for instance, between Tendencies (e.g. *vyigryvat'* 'win') and Unbounded Tendencies (*uvelichivat'* 'increase'), etc.

Semantic Type — A finer classification based on Paducheva's taxonomy, this introduces a finer semantic classification for some verbs.

Not all verbs are given entries for Sit Type 2 and Semantic Type.

Control	A binary toggle indicating whether the subject exerts control over the event or not (in effect this is one of the more important Proto-Agent features of Dowty 1991).
Aktionsart	Aktionsart class (Attenuative, Inceptive, Perdurative etc.), where appropriate.
PAS	Predicate argument structure, a list of the semantic roles of the predicate, using traditional labels Agent, Experiencer, Theme, etc..
Root	The verb root
Basic verb	The unprefixed/unsuffixed verb on which the given form is based (e.g. *pisat'* is the basic verb from *raspisat'*, *raspisyvat'*, *raspisyvat'sja*, *podpisat'* etc.).
Subcat	The syntactic subcategorization of the verb (the syntactic types of argument it takes).
LCS	Much of the information relevant to the Lexical Conceptual Structure is distributed across other fields. This field specifies information about inchoatives, causatives, and lexical subordination.
Morphology	The prefix(es) used to form the verb, where appropriate (e.g. for *raspisat'*, *raz-*)
Conjugation class	The main classes are:

delat'	1aj
belet'	1ej
trebovat'	1uj
stuknut'	1nu
ischeznut'	1(nu)
pisat'	1a
brat'	1ath
kolot'	1o
govorit'	2i
zakrepit'	2i/aj (impf. *zakrepljat'*, see Sadler et al. 1997).

The nouns table includes the following information:

ID	Identifier
Noun	The nominalization. This is often zero (marked as -) so that we can easily identify those verbs which lack nominalizations (they will be matched with such a zero entry).

Verb	The verb from which the nominalization is derived (including verbs for which there is no nominalization).
Gloss	The meaning of the nominalization (sometimes this is simply 'action of the corresponding verb' or some such).
Notes	As for Verbs Table.
PAS	As for Verbs Table.
PAS change	The difference between the PAS of the verb and its nominal, e.g. 'Agent suppressed'.
Aspect	The aspectual meaning of the nominalization (usually either null, -, or imperfective). Note that this field does not commit us to the view that nominals express grammatical aspect.
Basic verb	See Verbs Table
Noun suffix	The suffix used to form the nominalization from the verb.
G-change	The subcategorization frame for the nominal, showing how arguments are realized (if at all).
S-change	A label indicating the type of nominal in Grimshaw's classification: Complex Event (CE), Simple Event (SE), result.

3. Verbs Table

3.1 Verb

Verbs are listed in the perfective and the imperfective (with an indication of the other pair in the field Aspectual Pair). To keep track of polysemous and homophonous verbs we give each repeated entry a number, e.g. *bit'1*, *bit'2*, *bit'3*, etc. This means that it will sometimes not be possible to find all verbs with a particular name in queries by simply asking for the verb *bit'* (which doesn't in fact exist in the database). Either it is necessary to ask for a specific entry (say *bit'5*) or it is necessary to use the '?' wild card to return all verbs with the name *bit'*.

Reflexives are only specifically recorded where the reflexive adds some meaning other than the simple passive use of the imperfective. Following the claims of Spencer and Zaretskaya (1998b) we are in the process of identifying those reflexives which have a stative middle interpretation. However, these are not systematically included yet in the database.

3.2 Gloss

We are in the process of replacing English glosses with glosses in Russian, since the database can realistically only be used by those with a command of the language. [We plan to produce a completely Russianized version of the database in the future.]

3.3 Notes

Note that this is a Memo field and so cannot always be queried in the same way as a normal field.

3.4 Nominalizations

This field is for convenience only - the full information about nominalizations is provided in the Nouns table. Note that we include here property nominalizations of middle verbs (e.g. *dokazyvat'sja - dokazuemost'*), even though these are not strictly speaking deverbal nominalizations. In view of the fact that not all middles give such a nominal it seemed useful to have a record of this information (which is difficult to extract from standard dictionaries.)

3.5 Aspects

Field values: pf, impf, 2pf, 2impf, impf/pf

We distinguish perfective aspect (pf), imperfective aspect for unprefixed verbs (simplex, basic imperfectives) (impf) and secondary imperfectives (2impf) from prefixed perfectives. Verbs which are both perfective and imperfective are annotated as impf/pf. The prefixed base for secondary imperfectives need not necessarily be compositionally formed, e.g. *dobavljat'* is considered the secondary imperfective from *dobavit'* despite the fact that there is no basic verb **bavit'*). Note that it is not necessary for a secondary imperfective to have a perfective. Many secondary imperfectives develop additional meanings which lack corresponding perfectives (stative middles would be a prime example on our analysis) yet morphologically they remain secondary imperfectives. Whether a secondary imperfective is a true imperfective or merely a morphological imperfective is clear by querying the 'Aspectual Pair' field.

In addition, we distinguish a class of secondary perfectives (2pf). These are verbs which have become perfective by virtue of being given a specific Aktionsart, such as *pochitat'*, *kurnut'* and so on, and which lack a secondary imperfective. (This means that we will treat a quantitative Aktionsart verb such as *nakupit'* as a primary perfective, because it has a secondary imperfective *nakupat'*).

Paducheva (1996) points out that all aspectually paired verbs must permit an iterative/habitual/generic interpretation in the imperfective. This 'trivial' meaning of the imperfective is not recorded in entries, so any verb (in principle) can have an iterative/habitual/generic reading. See also below on Iteratives (Semelfactives) under Semantic Type 1.

From a semantic point of view the perfective is generally treated as basic, following Paducheva.

3.6 Aspectual pair

We give the perfective of imperfectives (sometimes somewhat arbitrarily in the case of unprefixed verbs, for well-known reasons) and the (secondary) imperfective of perfectives.

3.7 Situation type 1

Paducheva (1996) distinguishes primary Taxonomic (T-) categories (our Semantic Type 1) and secondary T-categories (our Semantic Type 2). The distinction is in many ways artificial (and is abandoned in Paducheva's later work, e.g. Paducheva 1998), but for the purposes of a database such as ours it has a certain utility. Our basic set of categories includes Semelfactive (following Smith, 1991).

Field values:

state State
act Activity
acc Accomplishment
ach Achievement
semel Semelfactive

We assume the following interpretation of the standard Vendler categories. More detailed discussion of the subtypes will be found under Situation Type 2.

States
States are situations in which an entity finds itself which do not evolve over time and which exist without the need for an external entity or situation to maintain the state.

Activities/Processes
Activities are situations which evolve over time and require the input of 'energy' in some intuitive sense. Activities proper are those undertaken intentionally by human agents (and are hence Control+; Processes are a subtype of activity undergone by non-human entities or by humans without intention (and are hence Control-).

States and Activities are atelic situation types

Accomplishments
Accomplishments denote changes of state which are the result of a preparatory phase of activity or a process (and hence are sometimes called culminations).

Achievements
Achievements denote situations in which an entity changes its state instantaneously, with or without a preparatory activity or process. Where there is a preparatory phase there is no gradual development of the situation (hence, no possibility that the entity will be interpreted as an 'incremental theme'). The distinction between Achievements and Accomplishments is often difficult to draw and sometimes rather arbitrary.

Semelfactives
Semelfactives denote a type of situation which is instantaneous, which does not necessarily involve a change of state (and hence differs from Achievement) and which

is usually found iterated. For example, knock referring to a single knock is Semelfactive, though 'knock at the door' usually refers to a series of knocks, which together are taken to be a single event.

The imperfective aspect of a semelfactive (e.g. *knock*) has a true iterative meaning and is recorded as such under Situation Type 2 (see Aspect above, Situation Type 2 below)

3.8 Situation Type 2

In general, a Situation Type 2 will denote a subset of a Situation Type 1. In many cases a Situation Type 2 denotes the subtype of ontological category expressed by the imperfective of the verb. For instance, the imperfective of an Accomplishment verb such as *postroit' (dom)* denotes the activity which gradually leads up to the creation of a house and is given the Sit Type 2 label 'developing action'.

We identify nearly 30 secondary types of situation. Some types are subtypes of more than one Sit Type 1, as is indicated in the table:

Field values:

bounded process	non-progressive	shift
conative	perfect state	successful achievement
disposition	phys. process	successful
distributive	phys. state	achievement/-
inceptive	phys./psych. state	tendency (tendencija
intention	prescription	(prostaja) e.g.
iterative	psych.	*vyigryvat'*)
location	relation	unbounded process
mental	semiotic relation	unbounded tendency

Notes on Situation Type 2

Subtypes of States

The main problem with States concerns States derived from other situation types such as generic, habitual or iterative actions of various kinds. Such interpretations are usually defined by general principles of grammar (see above for stative middles).

Intention ('Predstojanija' Paducheva, p.115)

Verb	Gloss	Sit Type 1	Sit Type 2	Semantic Type
pokidat'	ostavljat', brosat'	state	intention	
pokinut'	ostavit', brosit'	ach		motion

Verb	Gloss	Nominal	Sit Type 1	Sit Type 2	Semantic Type
naznachat'1	appoint, nominate	naznachenie	state	intention	designation
naznachat'2	plan (a date, time)	naznachenie	state	intention	designation
naznachit'1	appoint, nominate	naznachenie	ach	-	designation
naznachit'2	plan (a date, time)	naznachenie	ach	-	designation

Intentions ('Predstojanija') are non-progressive verbs in the Impf. paired with momentaneous verbs in the perfective. They are states determined by the subject's intention to undertake some activity in the future.

Subtypes of Achievements.

Successful Achievements and Non-progressives

Paducheva distinguishes the subtype *dostizhenie* defined as 'dejstvie s akcentom na rezul'tate + komponent "udalos"'. We translate her term *dostizhenie* as 'successful achievement' and treat it as a secondary T-cat. Simple achievements which do not contain the component 'udalos'' (and don't contain a component of intentionality) are either given a different SitType2 or are given no marking (-).

Unfortunately, in Paducheva's own discussion of this type there is a certain unclarity. Thus, she says (Paducheva 1996:110) that *naxodit'* is a 'chistyj iterativ', i.e. it has just the trivial meaning. This implies that the perfective *najti* cannot be a Dostizhenie because otherwise its imperfective would additionally have the meaning of Tendency. However, in footnote 1 she describes najti as 'dostizhenie' comparing it to *vyjgrat'*.

The problem seems to be that in this meaning *najti* is ambiguous, in that it can refer to accidental findings or findings which result from deliberate searches:

- sluchajno najti, ne ishcha (= pure achievement)
- iskat' i najti (= dostizhenie)

But the actual act of finding is uncontrolled in each case, so there is no ambiguity here after all, only vagueness about the types of contexts in which the verb can be used. (This is similar to *break* which can also be the result either of deliberate action or an accident.) The situation is different from that of *win, vyigrat'*, in which it is part of the meaning of the verb that the result/outcome of an activity is the one intended by the agent. Such verbs are marked [+controlled].

Our solution for *najti1* (and others like it) is to distinguish those verbs which unexpectedly lack the progressive/continuous meaning of the imperfective present (i.e. those verbs which only have the trivial meaning, even though there is no particular semantic reason for this).

The imperfective pair of *najti1*, *naxodit'1*, has no semantic properties of its own, because it is just the trivial imperfective of *najti1*. This means that it has the same Situation Types 1,2 as the perfective. We note the fact that it has no non-trivial meaning in the impf. by the Situation Type 2

Verb	Sit type 1	Sit type 2	Sem Type
naxodit'1	ach	non-prog	-
najti1	ach	-	-

Certain classes of verbs can only have the trivial meaning and can't have the progressive/continuous meaning which Paducheva regards as the primary meaning of the imperfective. These are recorded as Sem Type 2: Non-progressive (e.g. *najti1* ~ *naxodit'1*)

Statives lack progressive/continuous meaning and so are by default Non-progressive. This isn't marked in entries (see *naxodit'2* below).

Nedosmotret': Paradoxical example of 'successful achievement' (*Fil''m byl takoj skuchnyj, chto my ego nedosmotreli do konca*)

On the assumption that the not-watching is intentional then we have to assume that failing to finish something is the result aimed at and that failure to watch something to the end therefore counts as a successful achievement. The reason is obviously the incorporated negation.

Interestingly, the intentional component can be cancelled in the polysemous entry *nedosmotret'2*:

Verb	Gloss	Sit Type 1	Sit Type 2	Sem Type
nedosmotret'2	overlook, miss, not to look after properly	ach	-	miss

obidet': To the extent that one can offend someone accidentally as well as deliberately, this verb has to be [±control] and also ±Successful Achievement. The latter feature marking is given as 'successful achievement/-'. Note that as a Successful Achievement verb its impf. has the meaning of Tendency, otherwise it expresses a Perfect State.

Verb	Gloss	Sit Type 1	Sit Type 2	Semantic Type	Control
Obidet'	nanesti obidu	ach	successful achievement/-	psych. caus.	+/-

Posmet': Borderline case of State/Achievement?

Verb	Gloss	Sit Type 1	Sit Type 2	Control
Posmet'	dare	ach	-	?

Is this [+control] or [-control]?

Shifts/unbounded tendencies *(Sdvigi/nepredel'nye tendencii)*:
See ***Semantic Types***

Distributive

These are cases like *odarit', odelit'* where a single event consists of subevents of giving and yet the whole can be iterated (*kazhdyj god on vsex odarjaet...*)

Activities

States vs. processes

As Paducheva (1996:142) points out 'Process ploxo otlichim ot sostojanija (*cvesti, kolosit'sja* - processy ili sostojanija?). <...> Processam svojstvenna preryvnost'. Poètomu edva li otnositsja k processam glagol *rasti*."

Goret'1 'podvergat'sja dejstviju ognja' illustrates the problem identified by Paducheva very well. On the one hand it seems to have the semantics of a state verb ('the pie is in a state of burning') but on the other hand burning appears to be a process (with an endpoint: gorelyj pirog?). There are subtle differences between *goret'1* and *sgorat'* in this respect (though both seem to share a perfective form, *sgoret'*).

We have the following behaviour:

State-like -
*Poleno postepenno gorit
*Poleno polnostju gorit v nashem kamine

vs.
Poleno postepenno sgoraet
Poleno polnostju sgoraet v nashem kamine

Process-like -

Spatial location: V lesu/v kamine gorit poleno

(For Paducheva this is an important diagnostic for a dynamic rather than a stative verb).

Verb	Gloss	Notes	Sit Type 1	Sit Type 2
goret'1	unichtozhat'sja ognem	see also sgorat'	act	phys. process

Process = non-controlled activity (unbounded) or accomplishment (bounded).

Conative
We adopt the standard interpretation of conatives under which they are imperfectives with the meaning component 'attempt' (often, but not necessarily, unsuccessful). E.g. *ubezhdat'*. Note that many imperfectives can be interpreted as having an 'attempt' component in context, but in conatives this component is obligatory.

Unbounded tendency (nepredel'naja tendencija), e.g. *uvelichivat'sja*. This is an imperfective of a shift ('sdvig'), denoting a tendency for a property to increase or decrease without reaching an endpoint. Many inchoative deadjectival verbs can be interpreted as meaning 'become Adj' or 'become more(Adj)'. We regard such cases as essentially changes of states (i.e. with a basic meaning of 'become Adj'). The Unbounded Tendencies are then reserved for those verbs which can only mean 'become more(Adj)'.

Iterative We reserve this for the imperfective of a (true) semelfactive.

An iterative predication is potentially ambiguous between an 'accidental' iterative and 'true' iterative. An accidental iteration is a repeated event which just happens by accident to be identical to a previous event:

> The ornithologists kept finding bird no.1 (when they were hoping to find bird no.2)
> [accidental iteration]

A true iterative is a sequence of identical events which as a whole are perceived as a single connected event (see Semelfactive Situation Type 1):

> They knocked on the door (several times)
> [true iterative]

True iteratives can be complements to verbs of perception in continous present tense ('aktual'no-dlitel'noe vremja'):

> Ja slyshal, kak stuchali/stuchat v dver' i potom voshli v komnatu
>
> Ja slyshal, kak postuchali v dver' tri raza
> (ambiguous - one event three knocks, three events, n knocks)
>
> Ja videl, kak ornitologi naxodili odnu i tu zhe pticu.

Accidental iteratives are not registered with any special label in Sit Type 2, since they form one of the trivial meanings of the imperfective. (See discussion of Sit Type 1 Ach/Sit Type2 non-progressive)

However, the imperfectives of semelfactives (e.g. *knock*) have a true iterative meaning ('single event comprising series of identical subevents'). Such imperfectives are recorded as 'iterative' in Sit Type 2.

[In this respect we depart from Paducheva and colleagues.]

Hence:

Verb	Sit type 1	Sit type 2	Sem Type
stuchat'	act	iter	'contact' etc.
stuknut'	semel	-	'contact' etc.

Perfect state In which the imperfect means same as perfective (*ja vizhu = ja uvidel*)

Tendency A simple tendency (tendencija prostaja) such as *vyigryvat'* is the impf. of an achievement which has processual component (not the same as *unbounded tendency*!)

3.9 Semantic Types

The SemanticTypes are intended to give a rough grouping and do not have any particular theoretical status. Some of them are types we have reason to believe display specific properties, others are types which may well turn out to display such properties. Some of the types are very general (e.g. behaviour) while others are extremely specific (and may well not need to be recorded in a more complete taxonomy, e.g. swelling).

A number of SemTypes double Aktionsarten. The distinction between the two categories is to some extent arbitrary. For example the verb *meret'* is given the accumulative SemtType, on the ground that it is not derived morphologically from a verb without the accumulative component:

Verb	Gloss	Sit Type 1	Sit Type 2	Semantic Type	LCS	Morphol
meret'	umirat', pogibat' vo mnozhestve	ach	non-progr	accumulative	change of state	-

See Aktionsarten for further discussion.

Increase/decrease: this usually corresponds to 'increase' in LCS but not always. It is also used where verb stem itself includes a component of increase/decrease (*nabrat'4*) or where a verb is explicitly derived from a comparative adjective form (*uxudshit'* etc.)

List of Semantic types:

accompanying
accumulative
addition
appearance
application
arrival
assessment
assuming a position
attachment
attenuative
authorization
behaviour
bodily process
body posture
cleaning
collection
colour
combination
communication
consumption

contact with phys. object
covering
creation
damage
designation
destroy material integrity
destruction
direction
disappearance
distributive
emission
emptying
exchange
execute
exercise force
exhaustion
existence/presence
expectation
fear
filling
finding
giving
growth
having
hierarchy
impact
improvement
increase/decrease
inherent property
intention
interaction
judgement
keeping
light emission
measure
mediation
mental
missing
modality
  subtypes:
    obligation
motion
movement
obstruction
obtaining
occupation
occurrence
perceived state
perception
phase
physical contact
physical process
physical state
possession
pouring
prescription
protection
pseudo-behaviour
pseudo-occupation
psych.
  subtypes:
    expectation
    intention
    volition
psych./phys. state
purpose
putting
relation
relation with phys. object
removal
representation
result of behaviour
satiation
selection
semiotic relation
separation
showing
smell emission
social interaction
social relation
sound emission
sound production
spatial configuration
speech
speech, authorization
speech, behaviour
speech, judgement
speech, pseudo-behaviour
speech, pseudo-occupation
speech, psych.
spending time
swelling
taking
violation
volition
winning

Subtypes of States

Psychological states

Although verbs like *know*, *love*, *admire*, *consider* etc. etc. are traditionally referred to as states they are not canonical states (e.g. they have nominalizations). If we say 'I consider him stupid' then this is almost an activity on the part of the Subject (Experiencer). An indication of this un-state-like behaviour is found with *najti2* ~ *naxodit'2* = *schitat'*. If *naxodit'2* is a state then it should lack a perfective. This is one of a number of puzzles concerning psychological predicates and statehood which we are currently investigating. We record such verbs as States, but under Semantic Type they are described as psychological predicates ('psych'), indicating that they may not behave like other states.

Verb	Gloss	Sit Type 1	Sit Type 2	Semantic Type
naxodit'2	schitat', polagat'	state	mental	psych
najti2	poschitat', schest'	ach	-	-

Perceived states

These are verbs such as *belet´* in the sense 'to appear, be perceptible and to have property P'. (Many such verbs have homophonous inchoatives.

Perfect states

Verbs which in the present tense impf. mean that a change of state or a happening has obtained so that the present tense entails the past perfective. For instance, *ja vizhu* entails *ja uvidel.*

Verb	Gloss	Sit Type 1	Sit Type 2	Semantic Type
zakryvat'2	delat' nedostupnym dlja vzora	state	perfect state	perceived state
zakryt'2	sdelat' nedostupnym dlja vzora	ach	-	perceived state

Zakryvat'2 can't be used with adverbials of duration, because it denotes a perfect state.

Tucha zakryvala sol´nce *dva chasa/*ves´ den´

Cf. zavalivat´, or *Ja videl ego *dva chasa/*vse utro

Modal causative states of the kind 'allow'

Verb	Gloss	Sit Type 1	Sit Type 2	LCS
pozvolit'2	allow, make possible (inan)	ach		cause change of state
pozvoljat'2	allow, make possible (inan)	state	perfect state	cause change of state

The problem here is that we seem to have a state which has a perfective (achievement): *pogoda ne pozvolila...*, *obstanovka pozvolila....* Here we have a State (as opposed to an Agent) causing another State.

Dispositions

These are generic individual level states (inherent properties) derived from activities.

Verb	Gloss	Sit Type 1	Sit Type 2	Semantic Type
bodat'sja2	byt' bodlivym	state	disposition	-

Note that these are different from occupations and behaviours in that there is no way to define a specific semantic type for these (the semantic type depends on the type of the original activity verb, butting, kicking, biting, etc.)

[This is difficult to capture in a relational database of this type, though in a multiple inheritance hierarchy it should be possible to establish automatic semantic links between the meaning of the Disposition verb and that of the activity etc. verb on which it's based.]

Shifts/unbounded tendencies *(Sdvigi/nepredel'nye tendencii)*:

These are gradative verbs (essentially [BECOME[MORE/LESS[PRED]]]) e.g. usilit´sja.

It is often difficult to distinguish between simple changes of state such as *zabolet´* 'inchoative' impf. *zabolevat´* tendencija (obychnaja) and sdvigi/nepredel´naja tendencii, *usilit´sja* impf *usilivat´sja*

Many simple inchoatives can also be interpreted as gradatives ('become happy/become happier'). However, the shifts are those verbs which can ONLY be interpreted as BECOME[MORE]. All other cases will be simple inchoatives/changes of state.

SitType1 of impf:	Activity (because no limit is reached: nepredel´naja tend.)
SitType2:	shift/unbounded tendency
Semantic Type:	various
LCS:	increase of state (intr.); cause increase of state (tr.)

Verb	Gloss	Nominal	Asp	Asp pair	Sit Type 1	Sit Type 2	LCS
uvelichit'	increase	uvelichenie (CE/res)	pf	uvelichivat'	ach	shift	cause increase in state
uvelichivat'	increase	uvelichenie (CE/res)	2impf	uvelichit'	act	unbounded tendency	cause increase in state

Attenuative PRI-verbs are therefore by definition all *sdvigi*.

Psychological predicates

We don't distinguish between Pesetsky's (1995) Target and Source of emotion, e.g. *besit': eta stat'ja menja besit* = contents CAUSE (BEC(me, angry)) i.e. I disagree with the author.
[=/= *fakty, izlozhennye v stat'e, vyzyvajut u menja negodovanie*]

Psychological causatives are indicated in LCS ('cause change of psych. state' etc.)

Performatives: we don't distinguish performatives. They can be found under Sem Type 'speech'.

Verb	Gloss	Sit Type 1	Sit Type 2	Semantic Type
blagoslovit'	perekrestit', proiznosja slova molitvy	ach	-	speech, judgement
blagoslovljat'	krestit', proiznosja slova molitvy	ach	-	speech, judgement

Result of behaviour

Naprokaznichat': in which an activity (intr. verb) presupposes that undesirable or negative consequences follow from the given behaviour.

Occupations and Behaviours

(Pseudo)Occupations/Behaviours = activities with no secondary sit type.

Verb	Gloss	Sit Type 1	Sit Type 2	Semantic Type
carstvovat'1	byt' carem	activity		occupation
bujstvovat'	vesti sebja bujno	activity		behaviour

These are activity (or accomplishment) verbs which are inherently generic and hence, in one sense, denote states. However, they lack most of the properties of states. We denote them as Activities (etc.) on the understanding that they are uniquely identifiable from SemType as Occ/Behav. Note the difference between Occ/Behav. and Dispositions, which are genuine statives. In other words, Dispositions are properties/individual-level states, which Occ/Behav. are generic activities. [In principle you could say of a dog 'Kusaetsja' even if the dog had only once ever bitten anyone, provided it gave all the signs that it would do so again given the chance, but you can't say of a person 'prepodaet, kochuet, flirtuet, lentjanichaet if they don't actually exhibit the behaviours which define the activities concerned.]

This still leads to difficulties in the absence of much finer gradations of semantic analysis. Thus, we have the following aspectual pair:

Verb	Gloss	Aspectual pair	Sit Type 1	Sit Type 2	Semantic Type
donimat'	dosazhdat' chem-l, vyvodja iz terpenija	donjat'	activity		pseudo-behaviour
donjat'	vyvesti iz terpenija, dosazhdaja chem-l	donimat'	ach		cause change of psych. state

The problem here is that as an impf. *donimat'* has to be labelled 'pseudo-behaviour' because it has a regular meaning as a generic. However, it's also a psychological causative, which is only apparent from the entry for the perfective. We leave this as a problem to be solved by a database using multiple inheritance.

Inherent properties:

Verb	Gloss	Sit Type 1	Sit Type 2	Sem Type
delit'sja3	sostojat' iz kakix-l chastej	state	inherent property	-

Authorizations

In which an action serves to instantiate a rule of some kind. In the imperfective we label these verbs as activities though they come close to being states in some respects.

Verb	Gloss	Sit Type 1	Sit Type 2	Semantic Type
dopuskat'1	allow access	act	-	authorization
dopustit'1	allow access	ach	-	authorization

3.10 Control

Field values: +, -, +/-

We distinguish those predicates in which the subject has a measure of control from those in which the subject lacks control. This generally corresponds to Agent vs. Theme, though we assume that only entities possessing a mind can control, so that Instrument - Theme predicates will be [Control:-]. This is not at resent an important category in our taxonomy, though it may become more so when we investigate the details of Proto-Agent and Proto-Patient properties in more detail. Some verbs can be interpreted as either Control:+ or Control:-, and these are marked +/-.

Some verbs refer to undesirable consequences of activities carried out by Agents, e.g. natoptat´:

Verb	Gloss	PAS	Control
natoptat'1	exhaust feet/ get callus as a result of walking	Ag-1,Th-2	-

In the case of obgonjat´ we see a secondary semantic layer (of 'tendency') which is incompatible with Control:+, so we label the verb agentive but uncontrolled:

Verb	Gloss	PAS	Control
obgonjat'	imet' tendenciju obognat'	Ag-1,Th-2	-

An ability verb such as 'be able to play a musical instrument' is treated in the same way:

Verb	Gloss	PAS	Control
igrat'5	umet' igrat' na muz. instr.	Ag-1	-

The question of control requires much more careful analysis (see for example Levin and Rappaport Hovav 1995 for arguments against the notion).

3.11 Aktionsarten (sposoby dejstvija)

Field values:

accumulative
action around
additive
attenuative (also Semantic Type)
completive

distributive action	
distributive motion	
exhaustion	
inceptive	(also Situation Type 2)
intermittent	
motion around	
perdurative	
repetitive	
result	
satiation	(also Semantic Type)
semelfactive	(also Situation Type 1)

The category of Aktionsart is not well-defined. Roughly speaking it corresponds to a subset of situation types which are expressed morphologically, in some cases by very regularly correspondences, in other cases by more indirect means. Broadly speaking Aktionsarten can be divided into phasic (expressing beginning, ending, completing), quantitative (doing a little, much of), and others. There is no agreed list of Aktionsarten, though some Aktionsarten are more or less universally acknowledged. (One of these, the attenuative expressed by *pri-* is the subject of Spencer and Zaretskaya, in press, in which we argue that the construction does not, in fact, correspond to a typical Aktionsart and should be regarded as something else.)

Some of the situation types are rather specific and express meanings which are not lexicalized or grammaticalized in most languages (for example, the delimitative) while others are fairly general and correspond to universal semantic categories (e.g. inceptive). The morphological expression of situation may be fairly uniform (e.g. the *po-* prefix for the delimitative, or the *-nu-* semelfactive suffix) and may be rather varied depending on the semantic categories set up and depending on the precise interpretation of those categories. No prefix has just one meaning, and attempting to find a Gesamtbedeutung for a given prefix is a pointless task.

Ultimately, it may be best to lump together all Aktionsarten as just subtypes of situations.

Specific comments

Given our analysis of attenuative PRI-verbs we have labelled them 'attenuative' under SemType. However, for given that this is a very recent analysis we have also labelled these verbs 'Attenuative' under Aktionsart. However, we also use Attenuative as an Aktionsart for other prefixed types, esp. verbs in *pod-*.

Similarly for *na-...sja* verbs, which we take to represent a species of lexical subordination with SemType 'satiation'. However, we also label them 'Satiation' under Aktionsart.

Similar remarks hold of *za/raz/do-...-sja* verbs.

Result: result of behaviour, e.g. *naprokaznichat', naozornichat'*. These presuppose that some negative consequence follows from the behaviour described.

Distributive motion: *obxodit' vse magaziny* where the subject visits a large number of locations, denoted by the object of the verb. (This might also be analysed as a kind of lexical subordination, though we haven't investigated this possibility in detail yet.)

Motion around: refers to PATH component which goes around some object. (This doesn't figure in Jackendoff's analysis of PATHs because this type of path isn't lexicalized in English.) Note that this is different from distributive motion, which is a kind of quantitative aktionsart.

3.12 PAS

We give the obligatory actants of predicates with an arbitrary semantic label: Ag, Th, Exp, Source, Goal, Loc, Ben, Recip, Instr. and so on. The labels are transparent, though sometimes somewhat arbitrary. (We don't ascribe any deep theoretical significance to the labels). Sometimes we label a role with two alternatives: Ag/Th, Ag/Source. In some cases we indicate optional arguments in parentheses, though decisions here tend to be arbitrary and we will review this in future work. Altogether we identify about 300 distinct PAS types.

These labels are not to be taken too seriously. In some cases it is more or less impossible whether to call a subject role for a Behaviour Ag or Th for instance. Thus, do we say that *dvulichnichat'* has an agentive or a thematic subject, given that the activities which give rise to the description are no doubt intentional, but the particular description is not, presumably, part of the intentions of the actor. Cases of this sort have not been discussed seriously in the literature as far as we are aware, though they raise very interesting problems for theories of agency, and for semantic roles in general.

Particularly interesting problems are posed by the argument structure properties of verbs denoting properties and other derived states. As stative properties, the subject should presumably be a Theme, but in a number of cases we have to bear in mind the 'underlying' tier of LCS. For instance, a device which has the property of being able to detect something presumably has the semantic role of 'Instrument' rather than Theme.

Verb	Gloss	Sit Type 1	Sit Type 2	Sem Type	PAS	LCS
ulavlivat'2	(neodush) detect, perceive	state	disposition	inherent property	Instr-1	property
utoljat'2	(neodush) imet' svojstvo utoljat' (zhazhdu, etc)	state	disposition	inherent property	Instr-1, Th-2	cause change of phys. state property

In other cases it is quite unclear what a traditional semantic role label should look like:

Verb	Gloss	Sit Type 1	Sit Type 2	Semantic Type	Control	PAS	LCS
obzhigat'3	byt' zhguchim	state	perfect state	inherent property	-	?	cause change of state property

On occasions we find that a non-agent has to be treated as the instigator of a caused event. In those circumstances we refer to the Causer role as Source, though this is essentially an arbitrary label in such cases. Note that a state can be a Causer (see LCS).

Most causative verbs are transitive, so where the LCS bears the mark "cause ..." and the subject is human we generally have at least two arguments. However, one of these arguments may be reflexive, in which case the argument structure (and subcategorization) may be that of an intransitive verb. 'Reflexive' has to be interpreted rather loosely in some cases, e.g.

Verb	Gloss	PAS	LCS	Control
izbavit'sja	spastis', osvobodit'sja	Ag-1	cause change of state	+

(Reflexivity may be covert and need not be represented morphologically.)

Sometimes we find that the taxonomy as it stands is completely inadequate to convey the full semantics, often because of problems of 'point of view' and who is ascribing what motives, intentions, abilities and so on to whom. Thus, for *obnaglet'* it would be easy to motivate almost any combination of PAS:Ag, Th, LCS:change of state/cause change of state and Control:+/-:

Verb	Gloss	PAS	LCS	Control
obnaglet'	become impudent	Ag-1	change of state	-

Clearly, any labelling for such cases is arbitrary, and is only designed to serve as a very rough guideline. Like most researchers in this field we regard the semantic role labels as a crude shorthand for a much more developed aspectual and LCS representation, and ultimately the PAS should be reduced to a simple indication of the number of arguments and their hierarchical relationship.

Another very controversial area is that of psychological predicates. We have distinguished two broad classes of Semantic Type: psych. verbs which refer broadly to desires and other emotions and mental verbs referring to belief/knowledge. We regard the bearer of the emotion/belief state as an Experiencer, and then distinguish those states which appear to be under the control of the subject (such as *znat'*, *predpolagat'*) from those that are not (such as *oshibat'sja*). Emotions are uniformly treated as beyond the subject's control.

Impersonal verbs are indicated with a zero argument corresponding to the 'understood' argument:

Verb	Gloss	PAS	Subcategorization
zataplivat'2	(impers) zalit' vodoj	Source-0,Loc-1	NP-1:acc
ukachivat'1	make motion-sick	Source-0,Exp-2,Loc-3	NP-1:-,NP-2,NP-3:gde
rasxotet'sja	(bezlich) stop wanting	Th-0,Exp-1	NP-1:komu
paxn>ut'	(bezlich) begin to be felt, breathe (of)	Th-0,Manner-2,Path-3	NP-1:instr,NP-2: ot+gen/na+acc

3.13 Root

We largely follow works such as Gribble (1981), and Kuznecova and Efremova (1986), though on occasions we have eschewed particularly obscure etymological reconstructions in favour of relatively transparent roots. The question of what constitutes 'the' root of a verb is far from trivial, since some verbs use more than one root for their paradigms. This is particularly true of verbs whose aspectual pairs are related by root ablaut, such as *sobrat' ~ sobirat'*: do we say that there is a single root here (say, 'b#r') or two roots (say, 'br/bir/') or a single root with two alloroots (say, 'br~bir')? The answer in part depends on one's theory of morphophonology. In addition it will often depend on whether we take the aspectual pair to represent two forms of a single lexeme or two distinct lexemes.

The question of the organization of the lexeme, and particularly the vexed question of root/stem allomorphy and lexical representation is currently the subject of investigation, and for this reason we have not committed ourselves to a definitive solution for most of our entries.

3.14 Basic verb

This refers to the result of stripping a verb of all its prefixes. In some cases the basic verb doesn't itself exist as an independent entity, though its existence can be inferred morphologically from the constellation of prefixed forms (e.g. **bavljat'*). Non-existent basic verbs of this sort are indicated with a following cross-hatch, *bavljat'#*). This raises interesting, as yet unsolved, questions about word formation and whether words can take non-existent bases.

Basic verbs are generally imperfective. We take the determinate form of verbs of motion as the basic verb, where the imperfective is formed from the indeterminate (i.e. *vynesti/vynosit'* have basic verb *nesti*) but the indeterminate form is used if this forms the perfective (i.e. *vynosit'/vynashivat'* has basic verb *nosit'*). For genuine semelfactives we take the imperfective as the basic verb rather than the suffixed form in -nu- (which on our analysis is a derived perfective). However, for other -nu- verbs we effectively take the imperfective to be secondary, so that *ischeznut'* is the basic verb from *izcheznut'/ischezat'*.

3.15 Subcategorization information

We have provided basic information about the most common subcategorization frames. Much of this information can be read equally off the PAS entry. However, also provide information about case assignment and prepositional phrase complements. Altogether we identify nearly 250 patterns.

3.16 LCS

This field contains information principally about non-event aspects of meaning, esp. those involving the primitives CAUSE (causatives), BECOME (inchoatives). We write the LCS values in a variety of ordinary English, for ease of reading. Thus, causatives are indicated with the word 'cause', while inchoatives are represented as 'change of (X) state'. This field gives a fair amount of information about verb types, and includes over a hundred subclasses.

Field values:
act
AFF+
AFF+/-
AFF-
AFF- intention
be
be at location
cause
cause be at location
cause change of location
cause change of location intention
cause change of location/cause not to be
cause change of location/cause not to have
cause change of mental state
cause change of phys. state
cause change of phys. state property
cause change of phys./psych. state
cause change of phys./psych. state property
cause change of position
cause change of possession
cause change of possession intention
cause change of posture
cause change of psych. state
cause change of psych. state property
cause change of state
cause change of state intention
cause change of state property
cause change of status
cause change of status intention
cause decrease of state
cause event
cause event intention
cause increase of state
cause motion
cause movement
cause not to be
cause not to be intention
cause not to have
cause not to have intention
cause not to occur
cause perceived state
cause phys. contact
cause phys. process
cause phys. sensation
cause phys./psych. state
cause to act
cause to assume position
cause to be
cause to be at location
cause to be intention
cause to have
cause to have intention
change of location
change of location intention
change of mental state
change of phys. state
change of phys./psych. state
change of possession
change of posture
change of psych. state
change of state
change of state intention
change of state property
come into physical contact
come not to be
come not to have
come to be
come to be at location
come to have
decrease of state
enter into relation
event
increase of state
intention
lex subord
lex subord/AFF+
lex subord/AFF-
lex subord/cause change of location
lex subord/cause change of phys. state
lex subord/cause change of phys./psych. state
lex subord/cause change of possession
lex subord/cause change of posture
lex subord/cause change of psych. state
lex subord/cause change of state
lex subord/cause come not to be
lex subord/cause decrease of state
lex subord/cause increase of state
lex subord/cause motion
lex subord/cause not to be
lex subord/cause not to have

lex subord/cause to act
lex subord/cause to be
lex subord/cause to have
lex subord/change of mental state
lex subord/change of phys. state
lex subord/change of phys./psych. state
lex subord/change of psych. state
lex subord/change of state
lex subord/come to have
lex subord/enter into phys. state
lex subord/enter into state
lex subord/increase of state
lex subord/property
middle
motion
motion intention
property

Markers: property, intention, middle

Discussion

We do not provide a specific LCS value for simple atelic situation types (States and Activities), true Semelfactives, or Happenings (uncaused true achievements), since the basic information is already provided in the Situation Type 1 field.

Lexical subordination (*lex subord*)
This refers to a class of predicates in which the main semantic predicate is different from the basic verb as a result of prefixation. Often, but not exclusively, this gives rise to an 'unselected object', that is a direct argument which cannot serve as the argument of the basic verb. An example of this would be *is-pisat' (ruchku, bumagu)* 'to run out of ink, paper'. This literally means 'to out-write one's pen/paper', with 'pen, paper' becoming the direct object of the derived verb. However, the combination *pisat' ruchku/bumagu* is impossible (since *pisat'* is a verb of creation of text, not a verb of exhaustion). Such verbs are discussed in some detail in Spencer ad Zaretskaya (1998a, in press).

In some cases we further specify the LCS of verbs of lexical subordination, as 'cause change of state' or whatever.

Note that simple causatives are not instances of lexical subordination, because the main verb predicate is then an LCS complement to the CAUSE predicate, and not simply a manner component to the main predication.

We treat prefixed reflexives such as *na-...-sja, za-...-sja* etc. as instances of lexical subordination (Spencer and Zaretskaya 1998a), in that the *-sja* effectively represents a kind of unselected reflexive object. (Such verbs are easy to identify from the database, of course.) These are traditionally treated Aktionsarten (as are *pri*-verbs with attenuative meaning), and so we regard them as representing an Attenuative Semantic Type instead. (However, for convenience we also label them as 'Attenuative' under Aktionsart.)

Change of state
This is the standard marking for inchoatives of various kinds. We distinguish simple cases from changes of psych. state. Where humans are involved we also distinguish change of phys. state. (Some predicates are labelled 'change of phys./psych. state', where the change of state can be thought of in two ways (e.g. 'irritate') or where we

are simply not sure whether the language treats the state as essentially physical or essentially psychological ('torture' and its various synonyms).

Subtypes of change of state: change of location, change of body position, change of possession

A special subtype is *increase of state* (this refers to both increased and decreased states). This principally denotes shifts/unbounded tendencies.

Caused states
All the changes of state (including increase/decrease of state) can be caused. The Causer can be a human agent (Ag in PAS) or non-human (Source) including another state.

We also distinguish caused motion and, under certain circumstances, a category of caused event.

AFFECT. For verbs of helping, hindering, harming by speech act verbs and so on, we borrow Jackendoff's (1990) 'Affect Tier', labelling the affects simply as positive or negative.

Psychological predicates
Psychological causatives and inchoatives are represented as '(cause) change of psych. state'. The distinction between an agentive causative (*Tom frightened Mary with a scary mask*) and a stimulus/theme causative (*The scary mask frightened Mary*) is represented in the PAS (Ag-1,Exp-2 vs. Th-1,Exp-2). Note that the distinction between Subject Experiencer verbs (such as *ljubit'* 'love') and Object Experiencer verbs (such as *ustrashat'* 'frighten' or *nravit'sja* 'be pleasing to') is uniquely recorded at PAS: SubjExp = Exp-1,Th-2, ObjExp = Th-1,Exp-2.

We distinguish the term 'mental' and 'psych.'. 'Mental' essentially refers to predicates of belief and knowledge, while 'psych.' refers to emotions (desires etc.). There are unclear types between these (e.g. *hope*).

We distinguish between verbs labelled '(cause) change of possession' and 'cause to have', though the difference is somewhat subtle. Change of possession refers to situations in which one actant relinquishes possession in favour of another (e.g. giving, lending, buying/selling) while causing to have does not entail that the subject possessed the object transferred (e.g. *deliver, send, allot*).

Properties
A very interesting problem is posed by coercive uses of predicates, in which the basic situation type has an additional situation type overlaid on it, in roughly the same way that a mass noun can be coerced into a count usage ('Universal Packaging') or vice versa ('Universal Grinding'). A number of verb types of particular interest in Russian show this property.

Our database does not permit us to represent this very straightforwardly, so we adopt a provisional notational solution, in which we add an extra parameter to the LCS

value. These denote dispositions or inherent properties ('property'), intentions ('intention') and the stative middle (Spencer and Zaretskaya 1998b) ('middle').

We have listed a number of verbs which denote dispositions (inherent properties). These are stative verbs and would therefore not normally be given a separate LCS entry. However, in effect they have a two-tiered LCS in that they denote Activities, Accomplishments and so on which are then reinterpreted as properties. (Such verbs are rare in English and therefore don't seem to have been specially studied.)

We therefore set up a special LCS parameter of 'property' for such verbs, adding this to the normal LCS value, or making this the only LCS value. (Strictly speaking this is redundant, since the information can be found from cross-querying LCS and SemType or Sit Type 2, but it would be easy to miss this subclass of verbs by just querying the LCS, so we have included it.)

Verb	Gloss	Sit Type 1	Sit Type 2	Sem Type	LCS
cel>it'1	obladat' lechebnymi svojstvami	state	disp	inh prop	cause change of phys. state property
delit'sja1	imet' svojstvo raspadat'sja na chasti	state	disp	inh prop	change of state property
poslabljat'2	(neodush) imet' poslabljajushchee svojstvo	state	disp	inh prop	cause change of state property
pristavat'1	imet' svojstvo prilepljat'sja	state	disp	inh prop	change of state property
Prixramyvat'2	byt' slegka xromym	state	disp	inh prop	lex subord/property
Kusat'sja2	imet' sklonnost' nanosit' ukusy	state	disp	inh prop	property

A somewhat similar problem is presented by verbs which we give the Sit Type 2 label 'Intention' (See Situation Type 2). These are the verb types labelled 'predstojanija' by Paducheva. They denote situations which a participant intends to bring about but which have not actually come about. In many ways, then, we have a further case of an 'outer' or 'secondary' aspectual category overlaid on a basic situation type. We provide LCS values for the basic verb type and again for convenience sake redundantly mark the LCS with the parameter 'intention'.

The final class of verbs of this type is the class of stative middles discussed in Spencer and Zaretskaya (1998b). Again, we mark such verbs with the LCS parameter 'middle'.

See also PAS

3.17 Morphology

Field values:

(samo)-o	de	na-do
(samo)-ob	do	nad
(samo)-raz	iz	ne-do
(samo)-u	na	ne-na

ne-vz
nedo
nedo-o
o
o(b)
o-bez
o-po
o-pre
o-s
ob
ob-o
ot
ot-so
pere
pere-do
pere-iz
pere-na
pere-o
pere-o-s
pere-po
pere-pod
pere-pro
pere-raz
pere-so
pere-u
pere-v
pere-vo
pere-vo-o
pere-za
po
po-na
po-o
po-raz
po-s
po-so
po-vy
po-za
pod
pod-raz
pod-so
pre
pre-iz
pre-ne
pre-o
pre-ob
pre-po
pre-pro
pre-u
pre-voz
pred
pred-na
pred-o
pred-o-pre
pred-ot
pred-po
pred-raz
pred-u
pred-v
pred-voz
pri
pri-pod
pri-v
pri-na
pri-nad
pri-o
pri-ob
pri-ot
pri-raz
pri-s
pri-s-po
pri-so
pri-so-vo
pri-u
pro
pro-iz
pro-s
pro-voz
protivo-po
raz
raz-o
raz-po
raz-pre
raz-pro
raz-s
raz-u
s
s-na
so
so-iz
so-po
so-pod
so-pri
so-pro
so-raz
so-v
so-vo
u
u-po
u-s
v
v-o
v-raz
voz
voz-na
voz-ne-na
voz-ob
voz-so
vy
vy-s
vz
za

This is a listing of the verb's prefix(es). Note that 'prefix' is a morphological notion here, and doesn't imply that the prefixation is productive or, in particular, that a specific meaning can necessarily be associated with the prefix.

Some prefixes are compound. Particular attention is drawn to *ne-do-* which arguably has an Aktionsart meaning. Colloquially, a handful of prefixes regularly attach to already prefixed verbs to give examples such as *po-na-kryt'* and so on. We have not investigated the question of which verb types permit which prefixes to be doubled, partly because this would require rather careful informant work. It is clear that by no means all the current types are recorded in standard dictionaries. This would make an

interesting study, in that it would throw light on the question of productivity and Aktionsarten.

There are a number of cases of apparent prefixation which have to be distinguished from real prefixation. Thus, we often find a verb derived from a noun which itself is prefixed. Such cases of pseudo prefixation are often imperfective, where we would expect prefixation to perfectivize. Some examples of pseudo-prefixation:

uzuvernichat' (> *izuver*) does not have prefix *iz-u*
nasilovat' is not derived from **silovat'* (but rather is related to *nasilie*)
naushnichat' is not derived from **ushnichat'*

The negative prefix *ne-* is treated as a pseudo-prefix except in the case of *ne-do-*.

An interesting contrast is seen between verbs with prefix *bez-* and privative verbs built on *o-bez*. On its own *bez-* is never a prefix with verbs, but is always an incorporated preposition (thus *bezdel'nichat'* is ultimately related to the prepositional phrase *bez del*). Hence, *bez-* is a pseudo prefix and is not marked in the Morphology field. However, *o-bez-* is a specific (compound) verbal prefix which produces a verb with the meaning 'cause not to have''. As such the compound prefix is therefore marked in the Morphology field.

3.18 Conjugation class

Field values:

1(nu)	1ej	2a	2irr
1a	1irr	2e	irreg
1aj	1nu	2e/aj	
1aj, 1a	1o	2i	
1ath	1uj	2i/aj	

We employ a classification of our own devising, based on a number of descriptive traditions. The idea is to indicate the principal conjugation class (Class 1,2) and the stem class (what kind of thematic vowel or other stem extension suffix is used, if any). The standard conjugation pattern for the present tense is as follows:

Person/Number	Class 1	Class 2
1sg	u	u
2sg	osh	ish
3sg	ot	it
1pl	om	im
2pl	ote	ite
3pl	ut	

The main subclasses are as follows (note the 2i/aj class discussed in detail in Sadler et al. 1997):

delat′	1aj	
belet′	1ej	
trebovat′	1uj	
stuknut′	1nu	
ischeznut′	1(nu)	
pisat′	1a	
brat′	1ath	
kolot′	1o	
govorit′	2i	
zakrepit′	2i/aj	(impf. *zakrepljat′*, see Sadler et al. 1997)
videt′	2e	
derzhat′	2a	

4. Nouns

It is as well to repeat that the relation between Verbs and Nominalizations is many-many.

Noun When querying Nouns entries bear in mind that the final character may be a numeral (homophonous nominalizations are given numerals to distinguish them). However, it is not the case that a given numeral corresponds to the same numeral which might appear on the corresponding verb (if indeed there is one).

Verb Copied from Verbs table

VerbGloss We include a copy of the gloss of the verb, since this often helps to distinguish homophonous or polysemous verbs (which otherwise are only identified by their integer postscript)

Gloss In the case of 'Complex Event' nominals, which simply name the situation denoted by the verb, this is often limited to an entry such as 'dejstvie po glagolu', 'sostojanie po glagolu' etc.

Notes See 'Verbs'

PAS See 'Verbs'

PAS change Field values:
none
PAS deleted
Ag deleted
Ag suppressed
Exp deleted
Exp suppressed
Loc deleted

Th deleted
Th deleted; Exp deleted
Th suppressed
Theme/Path deleted

We distinguish between 'Agent deleted' and 'Agent suppressed' types (where 'Agent' is actually a cover term for the subject argument, however labelled). Where the subject argument is deleted it cannot be accessed morphologically or syntactically (for instance, it cannot be expressed as an instrumental DP and it cannot control into purposive clauses). Where the subject argument is suppressed it is optionally realizable and syntactically active.

Aspect Field values: impf, pf, neutral

Many nominalizations, especially from morphologically transparent secondary imperfectives, have a predominantly processual meaning, reflecting the imperfective aspect of their base verb form (see Sadler et al. 1997 for further discussion of this). Such verbs are denoted as 'impf' in this field. Rarely, a nominalization denotes a situation type (i.e. is a 'complex event' nominal) but it refers to a resultant state, despite being imperfective morphologically. Examples of this are the nominalizations of Tendencies, i.e. imperfectives of Achievements with preparatory activity, such as *vyigryvat'*. The noun *vyigryvanie* means 'result of winning' not 'process or tendency leading to a winning event'. Such nouns are labelled 'pf'.

The label 'neutral' covers cases in which the semantics of the noun cannot be construed as either specifically perfective or imperfective.

Note that this field does not imply that grammatical aspect is actually reflected directly in the nominalizations (as it is, say, in Polish), but merely that the semantic interpretation commonly associated with particular grammatical verbal aspects is reflected (or modified) in the nominal.

Basic verb This is identical to the corresponding record in the Verbs table and is reproduced for convenience

Noun suffix Field values:

'	anie/an'e	ezh
'e	anija	i (pl)
0	azh	ie
0/ka	ba	ija
a	el'stvo	ilishche
abel'nost'	en'e	ina
an'e	enie	iny (pl)
anie	enija	ishche

ist'	nina	sha
itie	nost'	st'
j	o	stvo
ja	ok	t'e
jo	on	tie
ka	ost'	va
ki (pl)	ot	vie
l'	ot/anie	y (pl)
lo	ota	zha
most'	otnja	zhda
n'e	ov'	zn'
na	ovnja	
nie	sh	

We include a good many unproductive suffixes in this list. The most important morphological means of nominalization are *-anie/enie*, *-ka*, and zero marking (with or without final consonant palatalization).

G-change The subcategorization frame for the noun. We distinguish nearly 70 different types of subcategorization, indicating case marking and whether the first complement of the noun can be a possessive pronoun or not.

There are many subtleties associated with the precise expression of actants with nominalizations. In particular, there are very complex principles governing when an actant can be expressed as a prenominal possessive (e.g. pronoun or more rarely possessive adjective from a noun) and a postnominal genitive. The exact circumstances for this turn out to be extremely complex, as is the availability of an instrumental subject role (cf. also Cetnarowska (ms.) and Rozwadowska (1997) on Polish). We have provided data on a fair number of verbs, though collecting genuinely reliable data in this area would be a massive undertaking, and would probably have to contend with considerable individual variation.

Babby (1997) has recently argued that in principle two genitives are possible (though the results are stylistically very awkward and it is particularly difficult to get reliable judgements on individual cases. For these reasons we have left this field empty for a large number of verbs pending further research.

S-change Field values:

CE	physical state
CE/res	process
existence	psych. state
inherent property	relationship
location	result
mental state	SE
phys. sensation	state
phys. state	svojstvo (=property)
phys./psych. state	

A label indicating the type of nominal in Grimshaw's classification: Complex Event (CE), Simple Event (SE), result, or state nominal (e.g. denoting a psychological state).

Nominalizations

Nominalizations with the gloss '(rezul'tat) processa'. These are nominalizations from (so far 140) intransitive verbs, mainly inchoatives, in which the denotation of the nominal appears to be both that of the process itself and of the resulting process. Thus:

postepennyj process oxlazhdenija produktov (dolgo dlilsja) vs.
stepen' oxlazhdenija produktov (bespokoila nas)

This appears to be true of all such verbs, including those such *ocenivanie* which clearly derive from imperfective verb forms (showing that the 'state resulting from process' meaning can't be linked to perfective aspect in any way).

This is particularly intriguing, given the observation that verbs which denote states systematically fail to give (CE) nominalizations.

Examples of non-inchoatives:

reakcija 1
protechka2 < propustit' vlagu
stesnenie 2 < crowd together?
perevoploshchenie

There are intriguing borderline cases in which it is difficult to know exactly what situation type is denoted by the nominal. A case in point is *razvod*, which doesn't generally behave like an activity noun: **oni (dva goda) zanimajutsja razvodom*. However, you can say *oni dva goda v razvode* meaning that they are in the (resultant, 'perfect') state of divorce, corresponding to *Oni dva goda kak razvelis'* (and NOT corresponding to the processual *Oni dva goda razvodjatsja*). In other words, *razvod* essentially denotes a resulting state, but isn't a CE nominal. It would be very interesting to investigate such types further.

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