

AN INVESTIGATED RELATIONSHIP BETWEEN ASPECTUAL PREFIXES AND VERBAL  
SEMANTICS IN RUSSIAN

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As many students studying Russian as a second language learn, the imperfective-perfective opposition is commonly realized through prefixation. This study attempts to show a semantic relationship between Russian aspectual prefixes and the verbs that they attach to in order to become perfective. The system of verbal aspect in Russian is outlined, as well as the concept of pure aspectual verbal pairs. The semantic categories used in determining a relationship in this study were based on Talmy's (1985) categories of Purpose, Cause/Manner, Causativity and Path. Over 900 verbs that are aspectually differentiated by prefix were analyzed according to prefix and semantic category. We then utilized descriptive statistics to determine tendencies or patterns between aspectual prefixes and verbal semantics. The results of the descriptive analysis showed that there appear to be some tendencies for certain prefixes to attach to particular semantic qualities. A chi-square analysis was next carried out to establish whether there is a statistically significant relationship between aspectual prefixes and verbal semantics, and the results of this test illustrated that the association is statistically significant, but not very strong. Based on these results, this study concludes with a discussion of implications for further research into this area.

## TABLE OF CONTENTS

1. INTRODUCTION .....	1
2. THEORETICAL BACKGROUND .....	5
2.1. DEFINITION OF ASPECT .....	5
2.2. THE VERBAL ASPECTUAL SYSTEM IN RUSSIAN .....	6
2.2.1. GRAMMATICAL ASPECT .....	6
2.2.2. LEXICAL ASPECT .....	9
2.3. PURE ASPECTUAL VERBAL PAIRS .....	16
2.4. SEMANTIC CATEGORIES AND CONFLATION .....	19
3. RESEARCH DESIGN .....	25
4. ANALYSIS .....	29
4.1. THE PREFIX <i>vy-</i> .....	29
4.2. THE PREFIX <i>iz-</i> .....	31
4.3. THE PREFIX <i>na-</i> .....	33
4.4. THE PREFIX <i>o-</i> .....	34
4.5. THE PREFIX <i>ot-</i> .....	35
4.6. THE PREFIX <i>po-</i> .....	37
4.7. THE PREFIX <i>pro-</i> .....	38
4.8. THE PREFIX <i>s-</i> .....	40
4.9. THE PREFIX <i>u-</i> .....	41
4.10. CHI-SQUARE ANALYSIS .....	42
5. CONCLUSIONS .....	47
APPENDIX A .....	51
Verbs that take the Prefix <i>vy-</i> .....	51
APPENDIX B .....	53
Verbs that take the Prefix <i>iz-</i> .....	53
APPENDIX C .....	55
Verbs that take the Prefix <i>na-</i> .....	55
APPENDIX D .....	58
Verbs that take the Prefix <i>o-</i> .....	58
APPENDIX E .....	62
Verbs that take the Prefix <i>ot-</i> .....	62
APPENDIX F .....	64
Verbs that take the Prefix <i>po-</i> .....	64
APPENDIX G .....	71
Verbs that take the Prefix <i>pro-</i> .....	71
APPENDIX H .....	74
Verbs that take the prefix <i>s-</i> .....	74
APPENDIX I .....	79
Verbs that take the Prefix <i>u-</i> .....	79

BIBLIOGRAPHY .....	81
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## LIST OF TABLES

Table 1: Construction of Tense-Aspect in Russian.....	7
Table 2: Morphological Expression of Aspect in Russian.....	8
Table 3: Lexical Type and Aspect in Russian .....	14
Table 4: Aspect and Verbal Patterns/Complements in Russian.....	15
Table 5: Semantic Categories expressed in Russian Verbs and Prefixes .....	23
Table 6: Semantic Categories Reflecting the Prefix <i>vy-</i> .....	30
Table 7: Non-Conflated Categories Reflecting the Prefix <i>vy-</i> .....	30
Table 8: Semantic Categories Reflecting the Prefix <i>iz-</i> .....	32
Table 9: Non-Conflated Categories Reflecting the Prefix <i>iz-</i> .....	32
Table 10: Semantic Categories Reflecting the Prefix <i>na-</i> .....	33
Table 11: Non-conflated Categories Reflecting the Prefix <i>na-</i> .....	34
Table 12: Semantic Categories Reflecting the Prefix <i>o-</i> .....	35
Table 13: Non-conflated Categories Reflecting the Prefix <i>o-</i> .....	35
Table 14: Semantic Categories Reflecting the Prefix <i>ot-</i> .....	36
Table 15: Non-conflated Categories Reflecting the Prefix <i>ot-</i> .....	36
Table 16: Semantic Categories Reflecting the Prefix <i>po-</i> .....	37
Table 17: Non-conflated Categories Reflecting the Prefix <i>po-</i> .....	38
Table 18: Semantic Categories Reflecting the Prefix <i>pro-</i> .....	39
Table 19: Non-conflated Categories Reflecting the Prefix <i>pro-</i> .....	39
Table 20: Semantic Categories Reflecting the Prefix <i>s-</i> .....	40
Table 21: Non-conflated Categories Reflecting the Prefix <i>s-</i> .....	41
Table 22: Semantic Categories Reflecting the Prefix <i>u-</i> .....	42
Table 23: Non-conflated Categories Reflecting the Prefix <i>u-</i> .....	42
Table 24: Relationship by prefix and verbal semantic category .....	44

## **1. INTRODUCTION**

Verbal aspect (lexical and grammatical) in the Russian language is one of the most notoriously difficult grammatical concepts for L2 learners of Russian. This study will attempt to define some of the theoretical problems encountered by L2 speakers of Russian (in particular, native English speakers). The paper will mainly focus on the morphological characteristics of verbal aspect in Russian, particularly prefixation, and will attempt to answer the following questions:

- Are there indeed “pure” aspectual verbal pairs in the Russian language?
- How are these aspectual verbal pairs morphologically realized in Russian?
- And, is there a correlation between the prefixes used to make a Russian verb perfective, and the semantics of the verb? Or, are these prefixes used independently of lexical semantics?

This study will attempt to show that certain verbs in Russian have aspectual pairs, and that in these pairs there is a relationship between the perfective prefixes and the semantics of the verb. The practical significance of this study is 1) to add to the theoretical literature on Russian verbal aspect and 2) to assist in learning/teaching Russian verbal aspect by explaining relationships among prefixes and verb roots. The nature of this research is primarily exploratory and interpretive.

Before answering the above questions, it will be necessary to outline the system of verbal aspect in Russian – define imperfective and perfective aspects, and illustrate generally how grammatical and lexical aspect are realized in Russian. Comrie (1976, p.16) describes what

constitutes the imperfective and perfective aspects: “perfectivity indicates the view of a situation as a single whole, without distinction of the various separate phases that make up the situation; while the imperfective pays essential attention to the internal structure of the situation.”

The concept of grammatical aspect will first be defined and discussed. The opposition between the perfective and imperfective is encoded grammatically; in other words, the perfective and imperfective aspects are realized through grammatical processes, like analytic constructions or derivational morphology. This is called grammatical aspect (also called viewpoint aspect, Smith, 1997). Russian grammatical aspectual forms are very salient morphologically, but not uniform – Russian differentiates the perfective-imperfective through many ways: prefixation, suffixation, suppletion, internal change, bi-aspectual verbs and uni-aspectual verbs.

One of the more common morphological processes of differentiating the perfective and imperfective is prefixation – often, the perfective verb form is the recipient of some sort of affixation; in other words, it is morphologically marked. Although there are several grammatical processes in Russian that show the imperfective-perfective opposition, this study will focus on what students are taught is a widespread process – prefixation.

Next, linguists recognize that there are semantic characteristics that define subclasses of verbs. These subclasses are based on the temporal nature of the event that the verb describes. This is called lexical aspect (also situation aspect, inherent aspect or Aktionsart). Smith (1997, pp. 22-35) illustrates the following lexical, or situation, types: States, Activities, Accomplishments, Semelfactives and Achievements. When discussing lexical aspect, these lexical types will be used throughout the paper. Although this study will focus on the morphological process of prefixation in Russian verbal aspect, it is necessary to recognize these lexical types in order to understand aspectual issues in verbal semantics.



After outlining the verbal aspect system in Russian, the next question that needs to be answered is: what are “pure” aspectual verbal pairs? Zaliznjak and Šmelev (2000) state that this question has received little attention in the literature and needs to be developed more fully. An initial definition of “true” aspectual pairs could be: a pair of verbs that are differentiated only by aspect. And, since prefixes represent a common process of perfectivization, some prefixes in the Russian language added to a verb form may be semantically “empty.” That is, these prefixes have no other meaning and simply act as indicators that the verb is perfective.

After determining the existence and definition of verbal aspectual pairs, this study will then address what types of semantic categories can be expressed in both the verbs and prefixes. The semantic categories used in this study are based on Talmy’s (1985) classifications and his notion of “conflation,” which is the idea that verbs are able to “conflate” different semantic components, that is, express more than one semantic category. For example, Zaliznjak and Šmelev (2000) provide a preliminary list of verb pairs organized by prefix that could be pure aspectual pairs. In these lists, which are arranged according to prefixes, many of the verbs are semantically related – for example, in the list of verbs that take the prefix *na-*, many of the verbs express writing of some sort, and require some sort of surface to do the activity. Initially, it could be said that these verbs conflate the meanings of Purpose (agent willing to perform the action) + Path (on) (action performed on or to a surface). Additionally, the prefix *na-*, although “semantically empty” and acting only as an indicator for perfectivity, is likely not used randomly. This prefix is related to the preposition *na*, which has several meanings, one of which is “on” (as in “on a surface”).

Essentially, what will be investigated in this paper is whether there is a regularity between the aspectual prefixes and the semantics of the verbs they attach to. For example, the prefix *na-*,

while expressing perfectivity, may also conflate the meaning “Path (on)”, and regularly attach to verbs that require a surface to perform the action, that is, verbs that contain the semantic category Path (on).

In this study, we will gather aspectual pairs morphologically expressed by prefixation, and each verb will be grouped according to prefix (nine total prefixes were examined). We will then give these verbs English translations, and place them in a semantic category (or more than one category, if there is a conflation of meanings). Then, a descriptive statistical analysis will be performed to determine if there are any tendencies for particular prefixes to attach to particular verbal semantic features. Next, we will conduct a chi-square analysis to establish if there is a statistically significant relationship between aspectual prefixes and verbal semantics. If there is a pattern, then we will determine if the semantics of the verbs and prefixes coincide.

This paper addresses whether there is a relationship between prefix and verbal semantics in pure aspectual verb pairs in Russian. In order to do this, it is necessary to: 1) outline the Russian verbal aspect system, 2) identify pure aspectual verb pairs and 3) perform statistical tests (descriptive statistics and a chi-square analysis) to determine if there could be a relationship between prefixes and the verbs’ semantics.

## 2. THEORETICAL BACKGROUND

### 2.1. DEFINITION OF ASPECT

A widely accepted definition of aspect is provided by Comrie (1976, p.3): “aspects are different ways of viewing the internal temporal constituency of a situation.” This can be illustrated by the examples *he read the entire book* and *he was reading for an hour*. Both sentences are in the past tense but differ in aspect: the first denotes the perfective, the situation as a whole (*he finished reading the book*), while the second shows the imperfective, which pays more attention to the internal structure of the situation (situation in progress), i.e. *he read the book for a while then stopped*. The perfective typically indicates a completed action; the resultative; or the initial point of an action. The imperfective, on the other hand, shows habituality and the progressive. This opposition between the perfective and imperfective can be realized through grammatical processes, like analytic constructions or derivational morphology. This is called grammatical aspect (also called viewpoint aspect, Smith, 1997).

Besides grammatical aspect, linguists recognize that there are semantic characteristics that define subclasses of verbs. These subclasses are based on the temporal nature of the event that the verb describes. This is called lexical aspect (also situation aspect, inherent aspect or Aktionsart). Smith (1997) illustrates the following lexical, or situation, types (pp. 22-35):

- States (or Statives) – situations which do not change, unless through external influence; for example, *she knows Russian*;

- Activities – situations including an ongoing unlimited process, uncountable internal stages or multiple events; for example, *she is laughing, she is eating grapes, the wheels turn;*
- Accomplishments – situations which result in a new state; for example, *they built a new bridge;*
- Semelfactives – instantaneous atelic situations; *she intentionally coughed;* and
- Achievements – instantaneous events that result in a new state; *the glass shattered.*

This section outlined basically the definition of aspect, the dichotomy between the perfective and imperfective, and grammatical and lexical aspect. The next section will provide background on how aspect is realized in the Russian language.

## **2.2. THE VERBAL ASPECTUAL SYSTEM IN RUSSIAN**

### **2.2.1. GRAMMATICAL ASPECT**

The grammatical aspect of Russian has the perfective-imperfective opposition, but it is realized only in the past and future tenses, while the imperfective only occurs in the present tense. Table 1 outlines how the interaction of tense and aspect in Russian is realized through certain grammatical processes (namely, syntactic and analytic constructions).

**Table 1: Construction of Tense-Aspect in Russian**

<b>Tense</b>	<b>Russian Imperfective</b>	<b>Russian Perfective</b>
<b>Past</b>	Syntactic construction 'čital' 'he was reading'	Syntactic construction 'pročital' 'he read' + object
<b>Present</b>	Syntactic construction 'čitaet' 's/he is reading'	N/A
<b>Future</b>	Analytic construction (verbal auxiliary) 'budet čitat'' 's/he will be reading'	Syntactic construction 'pročitaet' 's/he will read' + object

Additionally, Russian grammatical aspectual forms are morphologically very salient. Russian differentiates the perfective-imperfective through the following ways. The highlighted text indicates the morphological marker of aspect:

- Prefixation and suffixation

*Pisat'* (to write<sup>Impf</sup>) – *na**pi**sat'* (to write<sup>Perf</sup>) ⇒ prefixation

*Zakr**yy**at'* (to close<sup>Impf</sup>) – *zakr**yt**'* (to close<sup>Perf</sup>) ⇒ suffixation

- Suppletion

*Govor**it**'* (to speak, say<sup>Impf</sup>) – *skaz**at**'* (to say, tell<sup>Perf</sup>)

- Ablaut

*Prov**o**d-* (lead, carry out<sup>Impf</sup>) – *prov**e**d-* (lead, carry out<sup>Perf</sup>)

- Bi-aspectual verbs (verbs that contain both the imperfective and perfective meanings in one form; the aspect can be determined only through context)

*Likvidirov**at**'* (to liquidate<sup>Impf/Perf</sup>), *formalizov**at**'* (to formalize<sup>Impf/Perf</sup>)

- Uni-aspectual verbs (verbs that are imperfective or perfective only – they have no other aspectual counterpart)

*Oč**ut**it'sja* (to find oneself<sup>Perf</sup>), *žurč**at**'* (of water – to babble, rumble<sup>Impf</sup>)

Table 2 summarizes how aspect in Russian is expressed morphologically.

**Table 2: Morphological Expression of Aspect in Russian**

Aspect	Russian
<b>Imperfective</b>	1. Unmarked 2. Suffix <i>-iva-</i> , etc. 3. Uni-aspectual verbs 4. Bi-aspectual verbs
<b>Perfective</b>	1. Prefixes: <i>s-</i> , <i>vy-</i> , <i>po-</i> , <i>pro-</i> , <i>za-</i> , <i>u-</i> , <i>na-</i> , etc. 2. Suffix: <i>-nu-</i> 3. Suppletion: <i>govorit'</i> (impf.) – <i>skazat'</i> (perf.) 'to say' 4. Internal change: <i>provod-</i> (impf.) - <i>proved'</i> (perf.) 'lead, carry out' 5. Uni-aspectual verbs 6. Bi-aspectual verbs

The sentences below in the past tense (adapted from Smith, 1997, pp. 230-241) show how Russian expresses the perfective and the imperfective.

- Perfective:
- 1) *On **po**sidel v parke.* (Activity)  
He-NOM PREF-sit-PAST<sup>Perf</sup> in park-PREP  
He sat for a while in the park.
  - 2) *Ona **na**pisala pis'mo.* (Accomplishment)  
She-NOM PREF-write-PAST<sup>Perf</sup> letter-ACC  
She wrote a letter.
  - 3) *On stuk**nu**l v dver'.* (Semelfactive)  
He-NOM knock-SUFF-PAST<sup>Perf</sup> at door-ACC  
He knocked at the door.
  - 4) *My **vy**igrali matč.* (Achievement)  
We-NOM PREF-play-PAST<sup>Perf</sup> game-ACC  
We won the game.

- Imperfective:
- 1) *On stradal.* (Stative)  
He-NOM suffer-PAST<sup>Impf</sup>  
He was suffering.
  - 2) *On sidel v parke.* (Activity)  
He-NOM sit-PAST<sup>Impf</sup> in park-PREP  
He was sitting in the park.
  - 3) *Ona pisala pis'mo.* (Accomplishment)  
She-NOM write-PAST<sup>Impf</sup> letter-ACC  
She was writing a letter.

- 4) *On stučal v dver'*. (Semelfactive)  
He-NOM knock-PAST<sup>Impf</sup> at door-ACC  
He was knocking at the door.
- 5) *My vyigryvali matč.* (Achievement)  
We-NOM win-SUFF-PAST<sup>Impf</sup> game-ACC  
We were winning the game.

The perfective in Russian focuses on both the initial and end states of an action, while the imperfective concentrates on only part of the action. As can be seen from Tables 1 and 2, and from the examples above, the Russian imperfective exists in all tenses and all situation types. Therefore, the imperfective is regarded as the “principal,” or dominant, aspect in the Russian language.

### 2.2.2. LEXICAL ASPECT

Lexical aspect in Russian also displays some distinctive features. Smith (1997) outlines the semantic characteristics of dynamism, completion, non-detachability and duration when showing temporal features in the different lexical types. Dynamism is seen in non-stative situations, and defines events that require energy and often agency. Completion involves telic situations and can often be expressed with prepositions and some main verbs (like *končit'* – *finish*). Non-detachability “relates the process part of an event to its outcome. The property distinguishes Accomplishments from Achievements” (Smith, 1997, p. 43). Sentences with duration occur with adverbials of duration, which may include: lexical adverbs like *inogda* (sometimes); prepositional phrases – *do trex* (until 3 o'clock); and noun phrases like *ves' večer* (all evening). Additionally, superlexical verbs like *načat'* (to begin), *prodolžat'* (to continue) and *zakončit'* (to end) are compatible with duration. Smith (1997, p. 243) states that duration verbs require a complement containing the imperfective aspect. All the above semantic characteristics –

dynamism, completion, non-detachability and duration – apply to Russian. The following is an outline of how Russian expresses lexical aspect by way of these semantic features (Smith, 1997, pp. 243-250).

### *Statives*

Stative verbs in Russian can only be in the imperfective. Statives therefore, are compatible with duration and not completion:

- 1) *Ja ljublju Moskvu*  
I-NOM love-PRES<sup>Impf</sup> Moscow-ACC  
I love Moscow
- 2) *On znaet russkij jazyk*  
He-NOM know-PRES<sup>Impf</sup> Russian-ACC language-ACC  
He knows Russian

Stative verbs can also be transitive (as in the above two examples), intransitive (*My suščestvuem* – We-NOM exist-PRES<sup>Impf</sup> ; We exist), or can receive a sentential complement (*Ja dumaju, čto...* - I-NOM think-PRES<sup>Impf</sup> that ; I think that...). It is important to note that Statives with the imperfective form can have perfective counterparts, and these perfective verbs are not considered Stative, but can be considered Achievements (Smith, 1997). Compare the following two sentences:

- 1) *Sovy vidjat noč'ju*  
Owl-PL-NOM see-PRES<sup>Impf</sup> night-INSTR  
Owls see at night – Stative
- 2) *On ee pervyj raz uvidel*  
He-NOM she-ACC first-ACC PREF-see-PAST<sup>Perf</sup>  
He saw her for the first time – Achievement

Additionally, like in English, prepositions can influence situation type – for example, *Ja dumaju, čto on prav* (I-NOM think-PRES<sup>Impf</sup> that he-NOM right-NOM ; I think that he is right) is



a Stative, while *Ja dumaju o rabote* (I-NOM think-PRES<sup>Impf</sup> about work-PREP ; I am thinking about work) is an Activity.

### *Activities*

Activities in Russian refer to dynamism, and are compatible with duration, but not completion:

- 1) *My eli jabloki*  
We-NOM eat-PAST<sup>Impf</sup> apple-PL-ACC  
We ate apples
- 2) *On guljal v parke*  
He-NOM stroll-PAST<sup>Impf</sup> in park-PREP  
He walked/strolled in the park

Activity verbs, therefore, are usually associated with the imperfective aspect. These verbs take an NP or Locative complement, but they can also take no complement (*Deti šumjat* – Children-NOM make noise-PRES<sup>Impf</sup> ; The children are making noise). These verbs can also refer to “uncountable” bare NPs: *Ja p’ju vino* (I-NOM drink-PRES<sup>Impf</sup> wine-ACC ; I am drinking wine).

### *Accomplishments*

Accomplishments in Russian are compatible with completion, and can be either perfective or imperfective. They can also be transitive or intransitive, and must relate to specific situations:

- 1) *Ona vstala*  
She-NOM PREF-stand-PAST<sup>Perf</sup>  
She arose
- 2) *Ja s’ela pečenie*  
I-NOM PREF-eat-PAST<sup>Perf</sup> cookie-ACC  
I ate a cookie

### *Semelfactives*

Russian Semelfactives are incompatible with duration, completion and do not allow the imperfective (the imperfective counterparts of Semelfactive verbs are regarded as Activities or States). They can also be intransitive or transitive:

- 1) *On kašljanul*  
He-NOM cough-SUFF-PAST<sup>Perf</sup>  
He coughed
- 2) *bodnut' sopernika*  
butt-INF<sup>Perf</sup> rival-ACC  
to butt one's rival

These verbs can also take oblique complements – *Maxnul rukoj* (he-NOM wave-SUFF-PAST<sup>Perf</sup> hand-INSTR ; He waved his hand).

### *Achievements*

Achievement verbs in Russian reflect dynamism, are incompatible with duration, but can be compatible with expressions of completion. They can be transitive or intransitive, and are mostly associated with the perfective (like *našel ključ* – find-PAST-MASC<sup>Perf</sup> key-ACC; he found the key); however, some of these verbs can be imperfective when focused on the beginning stages of an action. This means that the beginning part of an action could be an effort at completing the action (also called “conative interpretation,” Forsyth, 1970). An example of this in Russian would be – *sdavat' èkzamen* (PREF-give-INF<sup>Impf</sup> exam-ACC; impf. – to take an exam) versus *sdat' èkzamen* (PREF-give-INF<sup>Perf</sup> exam-ACC; perf. – to pass an exam). It is also important to note that there are some Achievement verbs that can only be perfective (uni-aspectual), that is, there is no imperfective counterpart. The examples *ruxnut'* (to collapse) and *xlynut'* (to gush) illustrate this.

In addition, it is imperative to mention another issue related to lexical aspect in Russian: the importance of morphology. One way of illustrating this is through cardinality, or mass/count distinctions (comparing with English). Many authors have researched this topic: Slabakova (1999), Tenny (1994) and Verkuyl (1972), among others. In English, the telicity of the verb relies on its object's cardinality (examples adapted from Tenny, 1994, p. 24):

- 1) *I ate an apple in an hour* (\**I ate an apple for an hour*), compared to
- 2) *I ate apples for an hour* (\**I ate apples in an hour*).

In Russian, however, the object's cardinality is not significant in distinguishing aspect (Slabakova, 1999) – aspect in Russian is realized through the verb's morphology. For example:

- 1) *Ja s'ela jabloko za čas*  
I-NOM PREF-eat-PAST-FEM<sup>Perf</sup> apple-ACC in hour-ACC  
I ate (an) apple in an hour
- 2) \**Ja ela jabloko za čas*  
I-NOM eat-PAST-FEM<sup>Impf</sup> apple-ACC in hour-ACC  
I ate (an) apple in an hour
- 3) *Ja ela jabloki celyj čas*  
I-NOM eat-PAST-FEM<sup>Impf</sup> apple-PL-ACC whole-ACC hour-ACC  
I ate apples the whole hour (for an hour)
- 4) \**Ja s'ela jabloki celyj čas*  
I-NOM PREF-eat-PAST-FEM<sup>Perf</sup> apple-PL-ACC whole-ACC hour-ACC  
I ate apples the whole hour (for an hour).

In other words, when looking at the verb 'ate' in English, it is uncertain whether the verb is telic; but when one sees the Russian verb 's'el' there is no doubt that the verb is telic, while 'el' is atelic.

Other examples of the significance of the verb's morphology are syntactic in nature. Tenny (1987, from the Slabakova 1999 study) argues that aspect is quite closely related to the following three constructions: verb particles (*think through a problem* – *think a problem through*); resultative secondary predicates (*he swept the floor clean*) and double object

constructions (*Margaret sent Mary a package*). These constructions convey an endpoint of the situation and thus make the verb telic. With Russian, telicity is again expressed with verbal morphology:

1) ‘think through a problem/think a problem through’ – *produmat’ problemu*;  
 PREF-think<sup>Perf</sup> INF problem-ACC

2) ‘he swept the floor clean’ – *on načisto vymel pol*;  
 He-NOM clean-ADV PREF-swept<sup>Perf</sup> floor-ACC

3) ‘Margaret sent Mary a package’ – *Margarita poslala posylku Marii*.  
 Margaret-NOM sent<sup>Perf</sup> package-ACC Mary-DAT

Establishing telicity in English requires more than the verb itself – other parts of the sentence (like definiteness, verb particles, etc.) assist in determining whether the verb is telic. Russian, on the other hand, simply requires verbal morphology to establish telicity. Additionally, other elements in the Russian sentence (like adverbs and prepositional phrases) do not determine the verb’s telicity; rather they “agree” with the verb in telicity. For example, it is ungrammatical to use the adverb *často* (*often*) with the perfective, and the phrase *odin raz* (*one time*) is not used with the imperfective.

Tables 3 and 4 summarize the lexical type and aspect, as well as lexical type and verbal patterns in Russian.

**Table 3: Lexical Type and Aspect in Russian**

	<b>Statives</b>	<b>Activities</b>	<b>Accomplishments</b>	<b>Semelfactives</b>	<b>Achievements</b>
<b>Russian Aspect</b>	Imperfective	Imperfective/ Perfective	Imperfective/ Perfective	Perfective	Imperfective/ Perfective

**Table 4: Aspect and Verbal Patterns/Complements in Russian**

	<b>Statives</b>	<b>Activities</b>	<b>Accomplishments</b>	<b>Semelfactives</b>	<b>Achievements</b>
<b>Russian</b>	Sentential Complement; Prep. Phrase (lack thereof)	NP(bare), Locative Complement, No complement	Adverbial, Cardinal number	Oblique Complement	Conative

### 2.3. PURE ASPECTUAL VERBAL PAIRS

Traditionally, it is understood that Russian verbs come in “pairs”, that is, most imperfective verbs have a perfective counterpart, and vice versa (Švedova, 1980, vol. 1, p. 586; Lekant, 2000, p. 311). When students learning Russian as a second language are first taught about aspect, they are exposed to the notion that most verbs in the Russian language exist in aspectual pairs. For example, the verb ‘to write’ (*pisat*) is imperfective, showing habituality or the progressive. Its perfective counterpart is *na-pisat*<sup>1</sup>, which focuses on a completed action or result. Both verbs mean ‘to write’, and both verbs are found in any Russian dictionary under the lexical entry ‘to write.’ The prefix *na-* in this case adds nothing to the lexical meaning of the verb – it serves only as an indication that the verb is perfective.

This concept of aspectual pairs has persisted throughout many theoretical works on Russian aspect. Tixonov (1998), Petruxina (2000) and Zaliznjak and Šmelev (2000) assert that the system of pure aspectual verbal pairs is applicable when explaining Russian aspect. There is, however, some recent literature in which the idea of aspectual pairs is being questioned. Janda (2004) in particular, proposes the idea of “aspectual clusters” instead of aspectual pairs.

While Janda agrees that aspectual partnerships do exist, she considers that the relationships among verbs are much more complex and that aspectual pairs are a part of larger clusters. To continue with the example *pisat*<sup>Impf</sup>/*na-pisat*<sup>Perf</sup>, Janda proposes this verb pair to be related to other verbs like *pere-pisat*<sup>Perf</sup> (to rewrite), *za-pisat*<sup>Perf</sup> (to write down, record), *po-pisat*<sup>Perf</sup> (to write for a little while) and others. Essentially, other prefixes like *pere-*, *za-* and *po-*, in addition

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<sup>1</sup> The hyphen in this verb and in others to follow represents a morphological division between the verbs’ affixes and roots.

to *na-*, can be added to the verb *pisat'* to make it perfective, and therefore, some verbs like *pisat'* would have multiple partners rather than belonging to one pair.

While Janda's aspectual clusters do show relationships among verbs (the example above indicates activity dealing with writing), and while it seems that some verbs may indeed have multiple aspectual partnerships, these clusters are simply groups of aspectual pairs. For example, the verbs *pere-pisat'*<sup>Perf</sup>, *za-pisat'*<sup>Perf</sup> and *po-pisat'*<sup>Perf</sup> have imperfective counterparts: *pere-pis-yv-at'*<sup>Impf</sup>, *za-pis-yv-at'*<sup>Impf</sup> and *po-pis-yv-at'*<sup>Impf</sup> (although *po-pis-yv-at'*<sup>Impf</sup> may not be considered the exact imperfective counterpart to *po-pisat'*<sup>Perf</sup>, since *po-pis-yv-at'*<sup>Impf</sup> conveys a sense of irony in addition to an imperfective meaning). For the most part, these verbs (and most Russian verbs) can be classified as pure aspectual pairs – in the verbs *pere-pis-yv-at'*<sup>Impf</sup>, *za-pis-yv-at'*<sup>Impf</sup>, the suffix *-yv-* is added to the perfective verb to give the meaning of imperfectivity. Moreover, the prefixes *pere-*, *za-* and *po-* (and many more in addition to these) provide added semantic information, besides the meaning of perfectivity. *Pere-* denotes the meaning 'again' (as in the English prefix *re-*); *za-* has many meanings as a prefix, and when added to the verb *pisat'*, denotes the meaning "fix or make permanent by some action" (Townsend, 1975, p. 124); and *po-* in this sense adds the meaning 'for a while.'

Until more research has been conducted on the validity of aspectual clusters, the concept of pure aspectual pairs will be assumed. Our initial working definition of "true" aspectual pairs is as follows: a pair of verbs in which the marker of perfectivity or imperfectivity illustrates only aspectual meaning, and does not change the lexical meaning of the other verb in the pair. That is, some prefixes in the Russian language added to a verb form may be semantically "empty" – namely, these prefixes, when added to certain verbs, have no other meaning and simply act as indicators that the verb is perfective. This definition, naturally, does not apply to verbs that are

uni-aspectual (*očutit'sja* - to find oneself<sup>Perf</sup>) or bi-aspectual (*likvidirovat'* - to liquidate<sup>Impf/Perf</sup>), where the aspect of the verb is determined by context.

This paper will focus on the process of perfectivization by means of prefixation. Zaliznjak and Šmelev (2000) note that there are several prefixes in the Russian language that are added on to the imperfective form of the verb to make it perfective. These prefixes act as indicators that the verb is perfective – they do not add any other meaning to the verb, for example<sup>2</sup>:

- 1)    Pisat' (to write<sup>Impf</sup>) – **na**-pisat' (to write<sup>Perf</sup>)  
       [write-INF]    [PREFIX/perf.-write-INF]
- 2)    Stroit' (to build<sup>Impf</sup>) – **po**-stroit' (to build<sup>Perf</sup>)  
       [build-INF]    [PREFIX/perf.-build-INF]
- 3)    Delat' (to do, make<sup>Impf</sup>) – **s**-delat' (to do, make<sup>Perf</sup>)  
       [do-INF]                                [PREFIX/perf.-do-INF]

This list shows that there are several prefixes in the Russian language that can be used as purely aspectual prefixes. One of the goals of this study is to seek out why so many prefixes (at least nine), as opposed to one or two, can be used as purely aspectual indicators. Zaliznjak and Šmelev provide a preliminary list of verb pairs organized by prefix that could be pure aspectual pairs. An example of one group (with the prefix *na-*) is as follows (p. 83):

- 1)    pisat'                    ⇒    na-pisat'  
       [write-INF]                    [PREFIX/perf.-write-INF]
- 2)    pečatat'                ⇒    na-pečatat'  
       [print-INF]                    [PREFIX/perf.-print-INF]

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<sup>2</sup> In this list and in similar ones to follow, the imperfective form is listed first, followed by its perfective counterpart, and the translations underneath.



- 3)      risovat'      ⇒      na-risovat'  
          [draw-INF]                   [PREF/perf.-draw-INF]
- 4)      čertit'      ⇒      na-čertit'  
          [draw-INF]                   [PREF/perf.-draw-INF]

What is interesting to note in the above group is that these verbs are semantically very similar – they all express writing of some sort, and require some sort of surface to do the activity. Additionally, the prefix *na-*, although “semantically empty” and acting only as an indicator for perfectivity, is likely not used randomly. This prefix is related to the preposition *na*, which has several meanings, one of which is “on” (as in “on a surface”).

Drawing from the sample list above, this paper will attempt to determine if there is a correlation between the semantics of the verbs and the prefixes that are attached to them to become perfective. Therefore, these prefixes, deemed only as indicators of aspectuality, may in fact represent additional underlying semantic themes.

## 2.4. SEMANTIC CATEGORIES AND CONFLATION

In order to determine whether these aspectual prefixes can have underlying semantic connections to the verbs they attach to, this study must address how semantic meanings can be expressed.

Talmy (1985) introduces the phenomenon of “conflation,” and how semantic concepts are expressed with certain surface elements. The semantic concepts are connected with meaning, while the surface elements are the material that expresses the meaning. Talmy (1985, pp. 127-138) conceptualizes and defines thirty-five different semantic categories, which are expressed by

various surface elements like verb roots, inflectional endings and what Talmy deems as “satellites.” A satellite acts as a modifier to the verb root, and is often realized as a particle or affix. For example, in English the particle “past” can modify the verb “run” – *he **ran past** the store*. According to Talmy, the verb “run” represents the semantic categories of Motion and Manner (agentive), essentially motion by means of running, and the satellite “past” reflects the semantic category of Path; hence the verb complex “run past” conflates the meanings of Motion, Manner and Path.

Furthermore, Talmy (1991) divides languages into two categories: 1) verb-framed (where the framing event is encoded in the verb itself) and 2) satellite-framed (where the framing event is encoded in a verb’s satellite). Russian, as well as most other Indo-European languages, is a satellite-framed language. For instance, the aspectual prefixes (as opposed to the verbs) express the framing event of aspect, or the verb’s “perfectivity.”

This study will focus on two surface expressions: Russian verbs and their aspectual prefixes (satellites). However, not all thirty-five semantic categories will be investigated and utilized – this study will adopt certain semantic classifications based on Talmy’s categories. Since this study concerns only verbs and their aspectual prefixes, only certain semantic categories can apply (for example, semantic notions like tense, gender, person and speaker’s state of mind are unnecessary when investigating a possible semantic relationship between verbs and aspectual prefixes). The following verbal semantic categories will be the basis for the semantic/conflation types used in this study:

**Cause/Manner:** This category applies to verbs that convey motion or another type of action. A verb that contains the meaning Cause refers to an activity that happens due to a particular action. For example, the verb “pull at, tug” means “to move by (because of) pulling or

tugging”, or the verb “to group” which means “to arrange by (due to) putting into groups”. Manner, which has a similar meaning, refers to an activity that occurs by means of another action. For example, the verb “to hurry, rush” means “to go by means of hurrying, or to go while hurrying in the process”, or the verb “to sink” which means “to move by means of sinking.” The semantic categories of Cause and Manner are often presented together due to their similarities in meaning.

**Purpose:** A verb that expresses Purpose relates to what the agent doing the action intends to have happened because of the fact that he will carry out the action. For example, the verbs “to wash” or “to rinse” mean “to use water or another liquid in order to make something clean”. Or, the verb “to sweeten” which means “to apply sugar or another similar type of substance in order to make something sweet”.

**Path:** This semantic class reflects whether a verb expresses a particular path followed. Typical examples of verbs in this group would be “to enter” or “to exit”. Verbs of motion are usually associated with this semantic category; however, many actions are performed while conflating the meaning Path. Common paths (and ones used in this study) would include On, Away, Down and Through. Path (on) refers to actions that are done on a surface or to a surface – verbs like “to write”, “to wax”, “to knock” and “to pile on” are examples. Path (away) reflects actions that are done with the intention removing something, going away from somewhere or taking something or someone away – verbs in this category would include “to peel off”, “to run away” and “to ward off.” Path (down) indicates an action or event with a downward motion like “to sink” or “to fall”. Path (through) illustrates an action through a surface or even time: verbs like “to drill through”, “to stitch”, “to last” and “to spend the winter” are included in this semantic group.

**Aspect:** Verbs in this class express the temporal nature of an action or state. Russian verbs by themselves (without satellites) can express aspect – the verb *pisat'* (to write) by itself indicates that the verb is imperfective, while the addition of a satellite (the prefix *na-*) would indicate perfectivity.

**Causativity:** This semantic group is more broad and vague than the category Cause. With the group Causativity, actions can occur by themselves or as a result of another action; additionally these actions may or may not be caused by an agent, and the agent may or may not be willing to cause these actions. Verbs reflecting change of state often fall under this category – “to rot”, “to wither”, “to dry” or “to swell.” Other causative verbs include “to kill”, “to make someone laugh” or “to disturb”. The main difference between Causativity verbs and Purpose verbs are that the Causativity verbs above may or may not reflect volition, while Purpose verbs must indicate volition.

Next, we will list the satellites’ semantic categories that will be used in this study. The nine Russian aspectual prefixes that will be examined include *na-*, *o-*, *iz-*, *s-*, *u-*, *po-*, *vy-*, *pro-* and *ot-*. There are a few other prefixes in Russian that can express perfectivity (*pri-*, *za-*, *vz-*), but they attach to too few verbs for obtaining statistically valid results. The possible semantic categories for Russian aspectual prefixes are:

**Aspect:** As has been previously stated, certain prefixes in Russian can attach themselves to imperfective verbs in order to make them perfective. Semantically, these prefixes express the perfective aspect.

**Path:** It was noted above that satellites in Russian are usually needed to indicate Path. This is especially true of verbs of motion (*xodit'* ‘to go’ – *v-xodit'* ‘to enter’, *vy-xodit'* ‘to exit’, *pri-xodit'* ‘to arrive’, *u-xodit'* ‘to leave’, etc.). However, this study is not concentrating on verbs

of motion, but only on verbs that are differentiated in aspectuality by prefixes. In the nine prefixes that we will be investigating, most of them can have a path-related or directional meaning.

**Quantity/Degree:** This semantic category is not listed in Talmy’s classification. This group reflects satellites (prefixes) that express a degree or quantity of doing something, whether it is to a high or low extreme. For example, the prefix *po-*, when added to certain verbs, can mean “to do for a short time/do for a little while,” like *po-sidet* ‘to sit for a while<sup>Perf</sup>, or *po-govorit* ‘to have a (small) talk<sup>Perf</sup>. Likewise, the prefix *iz-* can have an intensive meaning of doing something to an extreme; for example *is-tratit* ‘to waste/spend completely<sup>Perf</sup>, or *is-kalečit* ‘to cripple/maim to a high degree<sup>Perf</sup>. In all these examples of Quantity/Degree the prefix (*po-* or *iz-*) conflates the meanings of both Aspect and Quantity/Degree.

The following table (Table 5) indicates the semantic categories that will be concentrated on in this study, and their surface expressions.

**Table 5: Semantic Categories expressed in Russian Verbs and Prefixes**

	<b>Verbs</b>	<b>Prefixes</b>
<b>Semantic Categories</b>	Cause/Manner Purpose Path Aspect Causativity	Aspect Path Quantity/Degree

One of the main issues that will be investigated in this paper is whether the aspectual prefixes in Russian conflate other meanings besides perfectivity. It is curious that as many as nine (and even more) prefixes are used to express perfectivity alone. This seems to be a high number of prefixes to express synonymy of one semantic element. Most linguists would agree that true synonymy is extremely rare. For example, Clark (1988) proposed the Principle of Contrast, in which, while acquiring language, children tend to reject the acquisition of synonyms because

they prefer attaching a single label for each semantic item. Perhaps there is an underlying semantic reason why certain prefixes attach to certain verbs to make them perfective. As seen in the above table, both verbs and prefixes in Russian can denote the meaning Path. For example, the prefix *na-*, while expressing perfectivity, may also conflate the meaning of “Path (on)” and regularly attach to verbs that require action towards or on a surface to perform the event, like “to write” or “to print”. Essentially, this study aims to determine whether there is a regularity between the prefixes’ meanings and the semantics of the verbs they attach to.

### 3. RESEARCH DESIGN

In order to systematize the pure aspectual pairs, it was first necessary to gather data (pairs of verbs that are distinguished only by the imperfective-perfective opposition were collected). The data was initially collected from Zaliznjak and Šmelev's (2000) preliminary list, as well as from Tixonov's (1998) numerous examples of verb pairs according to prefix. The next main source from which verb pairs were collected was the Russian dictionary by Ožegov and Švedova (2000).

In Russian dictionaries, when one looks up a perfective verb form, one would see the imperfective form in the same lexical entry. In Ožegov and Švedova (2000), the verb's definition is not included when looking up the perfective form – only an indication to look up the imperfective counterpart is found in order to discover the verb's meaning. For example, if one looked up the perfective verb *na-pisat'* (to write<sup>Perf</sup>), one would see the entry “see *pisat'* (to write<sup>Impf</sup>)”. When looking up the imperfective form in this dictionary, one then finds the verb's meaning. By using this dictionary's system, it was then possible to determine which verbs are considered pure aspectual pairs, and the aspectual verb pairs that were distinguished only by prefixes were recorded.

A total of nine prefixes were investigated – *vy-*, *iz-*, *na-*, *o-*, *ot-*, *po-*, *pro-*, *s-* and *u-*. These prefixes were chosen because they each attach to more than twenty-five verbs, which would yield more statistically reliable results. As stated in the previous section, there are a few other prefixes that can be used in distinguishing aspectual relationships (*za-*, *pri-* and *vz-*), but these prefixes – when indicating only a marker of perfectivity – attach to no more than twenty verbs, thus inhibiting the likelihood of statistical validity when determining a possible relationship between those particular aspectual prefixes and verbs.

Regarding statistical validity, it was difficult to establish how many verb pairs in each group would be enough to determine whether there is a strong correlation between the prefixes and the verbal semantics – we initially attempted to provide fifty to seventy-five verb pairs per prefix, but found a range of twenty-eight to two hundred and fifty-eight verb pairs per prefix. Since all prefixes attached to at least twenty-five verbs, this provides a greater chance of statistical reliability.

Furthermore, many types of verbs (modern literary, archaic, technical and loanwords) were initially investigated. In order to attempt to minimize an excessively wide range of verb pairs per prefix, some types of verbs were discarded from the study – most technical, archaic, vulgar and little used colloquialisms were deemed unnecessary. This study attempted to examine verbs that are used more often in everyday Russian speech and that students of Russian as a second language may eventually encounter.

After documenting the aspectual pairs and grouping them according to prefix, we then recorded their English translations. This study used two Russian-English dictionaries: Wheeler and Unbegaun (Oxford, 1997) and Katzner (2000). Additionally, the author's own English translations directly from Ožegov and Švedova (2000) were used.

Once the English translations were present, each verb was classified according to semantic category (Cause/Manner, Causativity, Purpose or Path). Many verbs displayed a conflation of semantic categories, that is, many verbs were shown to belong to two possible semantic categories. The most common conflation found was Purpose + Path, but the combinations of Causativity + Path, Cause/Manner + Path, Purpose + Cause/Manner and Causativity + Cause/Manner were found as well.



Once all the data was collected and grouped according to prefix and semantic category, a descriptive statistical analysis for each prefix was performed to show the percentages and number of occurrences of semantic features within a set of verbs belonging to a certain prefix. After the descriptive statistics were done, a chi-square analysis was carried out in order to determine a statistically significant relationship between aspectual prefixes and verbal semantics. The results and analysis of this study will be discussed in the next section.

Through the collection of the data, several dilemmas surfaced. One is that some verbs were found to have two different aspectual prefixes in Ožegov and Švedova (2000). In these cases, the verbs were cross-referenced in another Russian dictionary – Kuznecov (2000) – as well as the Russian-English dictionaries. After these verbs were found in these sources consistently to display more than one aspectual prefix, a native informant<sup>3</sup> was consulted to determine if more than one aspectual prefix could indeed be used in everyday speech with these verbs. In many cases, the informant stated that one of the two prefixes was hardly, if ever, used in speech – in those instances, the verb was grouped under the one, most often used, prefix. In other cases, however, two prefixes are used synonymously as pure aspectual indicators. For example, one verb may have two prefixes – one prefix the more literary form, while the other prefix the more colloquial form. This is an issue of style, and does not change any aspectual meanings. In those cases, the verb was cross-listed under both prefixes.

The next problem that emerged concerned the classification of the verbs into semantic categories. It was very difficult at times to differentiate Purpose and Causativity when determining volition. Verbs like “to wrinkle”, “to crush or grind”, “to disfigure” and “to frighten” may indicate both causation and volition of the agent. In these cases, the verb was

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<sup>3</sup> The native informant used in this study was Natalya Nikolaevna Žukova, a native speaker of Russian and a PhD in Philology from Moscow State University. Dr. Žukova has been an instructor of Russian as a Second Language at Moscow State University for the past twenty years.

listed as Causative – for example, an agent may frighten someone without intending to do so. Likewise, verbs like “to be frightened” or “to become disfigured” or “to become wrinkled”, which are acknowledged as reflexive verbs in Russian, were listed as Causative. Additionally, it was determined that if the action can be carried out by something other than a willing agent (natural phenomena like the weather), then it too was listed as Causative.

Emotion verbs like “to be glad”, “to be sad” and “to be afraid” also presented problems in semantic classification. They cannot be grouped with Purpose verbs, since emotions sometimes occur without volition, and they cannot be grouped with Path verbs, since no path-like entity is involved. In choosing between Cause/Manner and Causativity verbs, it was decided that the causative group is best suited for these emotion verbs because these events can occur as a result of another event or action, and they may or may not be caused by an agent (willing or not willing). Likewise, emotion verbs reflecting a change in psychological state – “to become angry”, “to become violent” or “to become bolder” – were also classified as Causativity verbs. Although these verbs are usually defined as stative or inchoative, for the purposes of this study they will be categorized as Causativity verbs since they closely resemble change of state verbs. Additionally, Stative verbs, as expressed in the section on Lexical Aspect, occur in the imperfective only. Since they have perfective counterparts, these particular verbs were placed in the Causativity group. Perhaps a future cross-linguistic study (comparing Russian emotion verbs with those in Spanish, for example, since they are structurally expressed in a similar way) could concentrate on the semantic qualities of these kinds of verbs and their aspectual relationships.

The following section will analyze each prefix more in detail to determine if a relationship exists between aspectual prefixes and verbal semantics.

## **4. ANALYSIS**

This section outlines each prefix, and determines the possibility of a relationship between the semantics of the aspectual prefix and the semantics of the verb it attaches to. For each prefix a table will be shown, illustrating the results of descriptive statistics. These tables will indicate the semantic categories (or conflation of semantic categories) that the verbs belonged to, as well as the percentages in which they occur. After each prefix is analyzed, the results of a chi-square analysis showing the relationship by prefix and semantic category will be presented.

### **4.1. THE PREFIX *vy-***

A total of fifty-two verbs were found to take the aspectual prefix *vy-* in the perfective (the complete list of verbs is found in Appendix A). The prefix *vy-*, according to Townsend (1975, p. 124), conveys the meanings of “out” (in a directional sense) or “completing or finishing something successfully”. Based on these meanings, and according to Talmy’s classifications, the semantic groups Purpose and Path (away) would be likely candidates in the semantic expression of this prefix.

Table 6 below indicates the different semantic categories of verbs found in this prefix (as well as conflated categories), how many of the verbs represent this semantic category, and their percentages.

**Table 6: Semantic Categories Reflecting the Prefix *vy-***

<b>Semantic Category</b>	<b>Number of occurrences</b>	<b>Percentage</b>
Causativity	7	(13.46%)
Causativity + Path (away)	3	(5.77%)
Causativity + Path (on)	1	(1.92%)
Purpose	8	(15.38%)
Purpose + Path (on)	15	(28.85%)
Purpose + Path (away)	6	(7.55%)
Purpose + Path (through)	2	(3.85%)
Cause/Manner	7	(13.46%)
Cause/Manner + Path (away)	2	(3.85%)
Cause Manner + Purpose	1	(1.92%)

The table above shows no pattern – the aspectual prefix *vy-* does not overwhelmingly prefer a particular semantic category, or any particular conflated categories.

In Table 7 below, all confluations were separated. That is, all Purpose occurrences were grouped together, all instances of Causativity, Cause/Manner, Path (on), etc. These figures show that the prefix *vy-* does seem to have a preference for Purpose verbs in general. In this sense then, there seems to be a relationship between the aspectual prefix and the verbal semantics in that out of fifty-two verbs, 61.54% of them reflect Purpose.

**Table 7: Non-Conflated Categories Reflecting the Prefix *vy-***

<b>Semantic Category</b>	<b>Number of occurrences</b>	<b>Percentage</b>
Causativity	11	(21.15%)
Purpose	32	(61.54%)
Path (on)	16	(30.77%)
Path (away)	11	(21.15%)
Path (through)	2	(3.85%)
Cause/Manner	10	(19.23%)

Besides the apparent inclination to be associated with Purpose verbs, verbs that take *vy-* as an aspectual prefix seem to have no other semantic elements in common. Since Purpose verbs reflect a willingness to have an action completed, this seems to be a logical category to indicate perfectivity, and may be a prevalent category in the following analyses of the prefixes.

#### 4.2. THE PREFIX *iz-*

The prefix *iz-* proved to be rather complicated. A total of forty-seven verbs were found to have this aspectual prefix; however, nineteen of them seemed to express Quantity/Degree characteristics in addition to aspectual qualities (the complete list of these verbs is found in Appendix B). Next to these nineteen verbs in the dictionary, two prefixes were listed as possible perfective prefixes. The native informant used in this study expressed that the verbs with the prefix *iz-* were indeed perfective, but that using this prefix displayed a more intensive, extreme meaning. This coincides with what Townsend (1975, p. 125) lists as the meanings of the prefix *iz-*: “out” (directional or abstract) and “doing something to extreme or to exhaustion”. Based on these meanings, the semantic groups Purpose and Path (away) may be frequently seen with this prefix.

Tables 8 and 9 below reflect all the verbs found to express *iz-* as its perfective prefix. The upper half of each table indicates the twenty-eight verbs that use *iz-* only; the lower half includes all forty-seven verbs (the twenty-eight verbs plus the nineteen that have two possible prefixes).

**Table 8: Semantic Categories Reflecting the Prefix *iz-***

	<b>Semantic Category</b>	<b>Number of occurrences</b>	<b>Percentage</b>
<b>28 Base Verbs</b>	Causativity	17	(60.71%)
	Causativity + Path (on)	3	(10.71%)
	Purpose	5	(17.86%)
	Purpose +Path (on)	2	(7.14%)
	Cause/Manner	1	(3.57%)
<b>47 Total Verbs (including Quantity/Degree meaning)</b>	Causativity	26	(53.32%)
	Causativity + Path (on)	8	(17.02%)
	Purpose	8	(17.02%)
	Purpose +Path (on)	4	(8.51%)
	Cause/Manner	1	(2.13%)

In both groups of verbs the prefix *iz-* appears to have an association with Causativity verbs. Most of these verbs are listed as causative because volition is not necessarily a factor (whereas many of the verbs that have *vy-* as an aspectual prefix do reflect volition). Additionally, fifteen out of the twenty-eight base verbs point toward a change of state of some sort, which is why many of these verbs are causative. Table 9 below illustrates the non-conflated categories.

**Table 9: Non-Conflated Categories Reflecting the Prefix *iz-***

	<b>Semantic Category</b>	<b>Number of occurrences</b>	<b>Percentage</b>
<b>28 Base Verbs</b>	Causativity	20	(71.42%)
	Purpose	7	(25.00%)
	Path (on)	5	(17.86%)
	Cause/Manner	1	(3.57%)
<b>47 Total Verbs (including Quantity/Degree meaning)</b>	Causativity	34	(72.34%)
	Purpose	12	(25.53%)
	Path (on)	12	(25.53%)
	Cause/Manner	1	(2.13%)

As shown above in both charts, this prefix shows a preference to attach to causative verbs; however, there does not appear to be a semantic connection between these verbs and the prefix.

Additionally, there do not appear to be Path (away) verbs that are found with the prefix *iz-*, although one might expect it to occur because it has the meaning “out”.

#### 4.3. THE PREFIX *na-*

A total of 101 verbs that take *na-* as an aspectual prefix were collected (the full list of verbs can be found in Appendix C). Townsend (1975, p. 126) listed the following meanings of *na-*: “on, to or against” and “to do in quantity (often something bad)”. Based on these meanings, one might expect to regularly find verbs that indicate Purpose and Path (on).

Table 10 shows all of the semantic groups found with verbs that take *na-* as an aspectual prefix.

**Table 10: Semantic Categories Reflecting the Prefix *na-***

<b>Semantic Category</b>	<b>Number of occurrences</b>	<b>Percentage</b>
Causativity	12	(11.89%)
Causativity + Path (on)	6	(5.94%)
Purpose	17	(16.83%)
Purpose + Path (on)	34	(33.66%)
Purpose + Path (through)	1	(0.99%)
Purpose + Cause/Manner	2	(1.98%)
Path (on)	1	(0.99%)
Cause/Manner	18	(17.82%)
Cause/Manner + Path (on)	10	(9.90%)

Although the semantic category Purpose + Path (on) is found most frequently in this group, its percentage does not show a reliable relationship. Table 11 below shows this prefix’s non-conflated categories.

**Table 11: Non-conflated Categories Reflecting the Prefix *na-***

Semantic Category	Number of occurrences	Percentage
Causativity	17	(16.83%)
Purpose	54	(53.47%)
Path (on)	51	(50.50%)
Path (through)	1	(0.99%)
Cause/Manner	31	(30.69%)

According to these figures, the semantic categories of Purpose and Path (on) account for about half of the occurrences in which verbs take *na-* as an aspectual prefix. Additionally, roughly a third of these verbs are Cause/Manner, but many of these verbs do reflect one of the meanings of *na-*: “to do in quantity (often something bad)”. These are verbs that are associated with something negative, such as “to act like a pig”, “to be rude to” or “to do something poorly”. Although this prefix shows no overwhelming preference for a semantic category, it is interesting to note that some of these verbs do appear to correlate with the second meaning of *na-*.

#### 4.4. THE PREFIX *o-*

The prefix *o-* attaches to 129 verbs to make them perfective (a complete list of these verbs is given in Appendix D). According to Townsend (1975, p. 127), the meanings of “around (encompassing or encircling)” and “abstract encompassment (in the sense of submitting or exposing)” are shown in this prefix. The semantic categories of Purpose, Path (around) and Causativity may be more often expressed in this group of verbs based on the meanings of the prefix.

Table 12 below illustrates the semantic classifications that were found in this verb group.



**Table 12: Semantic Categories Reflecting the Prefix *o-***

<b>Semantic Category</b>	<b>Number of occurrences</b>	<b>Percentage</b>
Causativity	70	(54.26%)
Causativity + Path (away)	1	(0.76%)
Purpose	35	(27.13%)
Purpose + Path (away)	6	(4.65%)
Purpose + Path (around)	2	(1.55%)
Purpose + Path (on)	5	(3.86%)
Cause/Manner	10	(7.75%)

As expected, Causativity and Purpose verbs are more prevalent in this group, with a slight preference for Causativity verbs, many of which are change of state verbs. Despite this prefix's meaning of "around" or "encompassment" the semantic category Path (around) occurs only twice. Table 13 below shows similar patterns in regards to non-conflated semantic categories.

**Table 13: Non-conflated Categories Reflecting the Prefix *o-***

<b>Semantic Category</b>	<b>Number of occurrences</b>	<b>Percentage</b>
Causativity	71	(53.49%)
Purpose	48	(37.21%)
Path (away)	7	(5.43%)
Path (around)	2	(1.55%)
Path (on)	5	(3.86%)
Cause/Manner	10	(7.75%)

Based on these figures, although there is a slight preference for Causativity verbs, there appears to be no semantic relationship between these verb's semantic qualities and the semantic features of the prefix *o-*.

#### **4.5. THE PREFIX *ot-***

A total number of thirty-seven verbs were collected that use the prefix *ot-* to become perfective (the full list of verbs is located in Appendix E). Based on Townsend (1975, p. 128) the prefix *ot-*

has the definitions “off, away from” and “back (as in return)”. These definitions may prompt one to expect to find verbs with the semantic meanings of Path (away) and Purpose.

Table 14 displays the semantic meanings found in this group of verbs, and their regularity.

**Table 14: Semantic Categories Reflecting the Prefix *ot-***

<b>Semantic Category</b>	<b>Number of occurrences</b>	<b>Percentage</b>
Causativity	3	(8.11%)
Purpose	14	(37.84%)
Purpose + Path (away)	3	(8.11%)
Purpose + Path (on)	16	(43.24%)
Cause/Manner	1	(2.70%)

The above table shows little connection between the prefix *ot-* and the semantic categories of the verbs that it attaches to. Furthermore, the category with the most occurrences indicates Path (on), while *ot-* as a prefix generally means “away from”. Table 15 below, however, shows that this prefix does seem to have a very strong preference for Purpose verbs.

**Table 15: Non-conflated Categories Reflecting the Prefix *ot-***

<b>Semantic Category</b>	<b>Number of occurrences</b>	<b>Percentage</b>
Causativity	3	(8.11%)
Purpose	33	(89.19%)
Path (away)	3	(8.11%)
Path (on)	16	(43.24%)
Cause/Manner	1	(2.70%)

Besides this prefix’s strong preference for Purpose verbs, this group reflected another characteristic: twenty-six out of the thirty-seven verbs are *-ova-* verbs. What is interesting about these verbs is that many of them are loanwords. The verbs are formed by taking a loanword root like *štamp* (stamp) and adding *-ova-* and the infinitive ending to create the verb  $\Rightarrow$  *štamp-ova-t’*

(to stamp, press<sup>Impf</sup>). This may mean that the prefix *ot-* is one of the standard aspectual prefixes to add to loanwords as they become assimilated into the language.

#### 4.6. THE PREFIX *po-*

The prefix *po-* is one of the most widespread prefixes in the Russian language, and also one of the most vague in meaning. A total of 258 verbs were found that use *po-* in a purely aspectual manner (this complete list is found in Appendix F). Townsend (1975, p. 129) lists the following definitions of *po-*: “to begin to (especially with verbs of motion)” and “diminution of time or intensity of action (do for a short time, from time to time, do with diminished intensity, do to a certain extent)”. Besides Perfectivity, this prefix represents the semantic category Quantity/Degree. Because of the lack in directional or path-like meanings, it is difficult to predict what kinds of semantic categories the verbs in this group would fall under.

Table 16 shows which semantic classifications that verbs with the prefix *po-* belong to.

**Table 16: Semantic Categories Reflecting the Prefix *po-***

Semantic Category	Number of occurrences	Percentage
Causativity	107	(41.47%)
Causativity + Path (on)	4	(1.55%)
Causativity + Path (away)	3	(1.16%)
Causativity + Cause/Manner	2	(0.78%)
Purpose	58	(22.48%)
Purpose + Path (away)	1	(0.39%)
Purpose + Path (on)	21	(8.14%)
Purpose + Path (down)	2	(0.78%)
Purpose + Cause/Manner	4	(1.55%)
Cause/Manner	53	(20.54%)
Cause/Manner + Path (down)	2	(0.78%)
Cause/Manner + Path (on)	1	(0.39%)

As can be seen above, a highly varied number of semantic categories and conflation types are signified in this group of verbs. Causativity has the most occurrences, but not nearly enough to show a significant relationship. This group represents such a broad range of semantic categories, that it is improbable to ascertain any semantic connections between the prefix *po-* and the semantic features of the verbs. Table 17 illustrates this further by showing the frequency of the non-conflated semantic groups.

**Table 17: Non-conflated Categories Reflecting the Prefix *po-***

<b>Semantic Category</b>	<b>Number of occurrences</b>	<b>Percentage</b>
Causativity	116	(44.96%)
Purpose	86	(33.33%)
Path (away)	4	(1.55%)
Path (on)	26	(10.08%)
Path (down)	4	(1.55%)
Cause/Manner	62	(24.03%)

Again, this shows that although Causativity verbs occur more frequently than other semantic categories in *po-* verbs, it is still not enough to yield any significant associations between prefix and semantic category. The most significant characteristic of this verb group is that since this group represents such a broad range of semantic qualities, it was able to produce a very high number (twelve) of possible combinations of semantic classes.

#### **4.7. THE PREFIX *pro-***

A total of eighty-nine verbs were collected that take the prefix *pro-* to become perfective (Appendix G provides the complete list of verbs). The meanings of this prefix, according to Townsend (1975, p. 131) are “through, by, past”, “through (in a sense of loss or failure)” and “to

do for (or through) a specific length of time”. Based on these definitions, one might expect the verbs in this group to contain the meanings Purpose and Path (through).

Table 18 specifies which semantic categories are included in this verb group.

**Table 18: Semantic Categories Reflecting the Prefix *pro-***

<b>Semantic Category</b>	<b>Number of occurrences</b>	<b>Percentage</b>
Causativity	13	(14.61%)
Purpose	31	(34.83%)
Purpose + Path (on)	5	(5.62%)
Purpose + Path (through)	9	(10.11%)
Purpose + Path (away)	2	(2.25%)
Purpose + Cause/Manner	2	(2.25%)
Cause/Manner	27	(30.34%)

In the figures above, no semantic category displays any significant correlations. The categories Purpose and Path (through) are observed in the above table, but they do not occur frequently enough to gain significance. Table 19 below outlines the frequency of the non-conflated semantic categories.

**Table 19: Non-conflated Categories Reflecting the Prefix *pro-***

<b>Semantic Category</b>	<b>Number of occurrences</b>	<b>Percentage</b>
Causativity	13	(14.61%)
Purpose	49	(55.06%)
Path (on)	5	(5.62%)
Path (through)	9	(10.11%)
Path (away)	2	(2.25%)
Cause/Manner	29	(32.58%)

The above table shows that the prefix *pro-*, like several others, displays a slight preference towards Purpose verbs. Additionally, many Cause/Manner verbs that deal with natural sounds or noise (like animal sounds – “to croak”, “to moo”, etc.) fall under *pro-* verbs.

#### 4.8. THE PREFIX *s-*

Like the prefix *po-*, the prefix *s-* has many meanings and attaches to many verbs in order to become perfective. A total of 171 verbs were found to take *s-* as their perfective prefix (the full list of verbs is listed in Appendix H). The meanings of this prefix found in Townsend (1975, p. 132) are as follows: “down (directional)”, “away from, off” and “together”. One may expect to find the semantic categories of Purpose, Path (down) and Path (away) to be prevalent in this group.

Table 20 lists the semantic classifications of these verbs, along with their frequency. Like the prefix *po-*, the prefix *s-* has made available many possible combinations of semantic categories.

**Table 20: Semantic Categories Reflecting the Prefix *s-***

Semantic Category	Number of occurrences	Percentage
Causativity	40	(23.39%)
Causativity + Path (on)	1	(0.58%)
Causativity + Path (away)	1	(0.58%)
Causativity + Path (down)	1	(0.58%)
Causativity + Cause/Manner	1	(0.58%)
Purpose	76	(44.44%)
Purpose + Path (away)	2	(1.17%)
Purpose + Path (on)	5	(2.92%)
Purpose + Path (down)	2	(1.17%)
Purpose + Path (through)	1	(0.58%)
Purpose + Cause/Manner	6	(3.51%)
Cause/Manner	35	(20.47%)

Since there are so many different combinations of semantic categories, there is no correlation between the prefix and the semantic categories. Purpose verbs are more frequent, but by themselves do not yield a significant relationship. Table 21 lists the totals of non-conflated types

and shows that the prefix *s-* does show a slight preference for all verbs that contain Purpose in their meanings.

**Table 21: Non-conflated Categories Reflecting the Prefix *s-***

<b>Semantic Category</b>	<b>Number of occurrences</b>	<b>Percentage</b>
Causativity	44	(25.73%)
Purpose	92	(53.80%)
Path (on)	6	(3.51%)
Path (down)	3	(1.75%)
Path (away)	3	(1.75%)
Path (through)	1	(0.58%)
Cause/Manner	42	(24.56%)

Additionally, as with the prefix *ot-*, the prefix *s-* seems to attach to a fair number of *-ova-* verbs (fifty out of one-hundred and seventy-one – roughly a third of the verbs). These two prefixes may be the standard ones that are found with verbs that come from loanword roots.

#### **4.9. THE PREFIX *u-***

A total of forty verbs that attach to the aspectual prefix *u-* were gathered (Appendix I displays the entire list of these verbs). According to Townsend (1975, p. 133), this prefix contains the meanings “away” or “submission (in a sense of doing something successfully)”. Based on these meanings, we can expect to find the semantic categories of Purpose and Path (away) to be fairly prevalent in this group.

Table 22 displays the semantic categories found with this verb group. The category Purpose is found more frequently than the other categories, while Path (away) hardly at all.

**Table 22: Semantic Categories Reflecting the Prefix *u-***

<b>Semantic Category</b>	<b>Number of occurrences</b>	<b>Percentage</b>
Causativity	12	(32.50%)
Causativity + Cause/Manner	1	(2.50%)
Purpose	22	(52.50%)
Purpose + Path (away)	1	(2.50%)
Purpose + Path (on)	1	(2.50%)
Purpose + Cause/Manner	2	(5.00%)
Cause/Manner	1	(2.50%)

Like several other prefixes, *u-* tends to prefer to attach to Purpose verbs. Table 23 displays this further by showing the non-conflated categories and their frequencies in this verb group.

**Table 23: Non-conflated Categories Reflecting the Prefix *u-***

<b>Semantic Category</b>	<b>Number of occurrences</b>	<b>Percentage</b>
Causativity	13	(32.50%)
Purpose	26	(65.00%)
Path (on)	1	(2.50%)
Path (away)	1	(2.50%)
Cause/Manner	4	(10.00%)

Although these figures show that *u-* prefers to attach to Purpose verbs, there does not appear to be any indications that there are any significant correlations between the prefix's meanings and the verbal semantics. For example, one of the prefix's meanings is "away", yet the semantic category Path (away) is found only once in this group. Also, very few verbs, if any at all, were found with the meaning "submission".

#### **4.10. CHI-SQUARE ANALYSIS**

The above sections attempted to find semantic correlations between aspectual prefixes and the verbs that they attach to by means of descriptive statistics. Few significant patterns were



discovered using this method. This next section will attempt to determine if there could be statistically significant patterns by means of a chi-square analysis.

A chi-square is a form of analysis used to determine whether there is a relationship between two variables, and how strong that relationship may be. When given the observed frequencies between the variables, it calculates the expected frequencies and the differences between the observed and expected frequencies. The two variables to be examined are aspectual prefixes and semantic categories. All nine prefixes used in the descriptive statistics will be included in the chi-square, and the four main semantic categories will be analyzed – Causativity, Purpose, Path and Cause/Manner.

Unlike the non-conflated tables of the descriptive statistics, not all occurrences of each semantic category were counted. For example, in the descriptive statistics, if a verb contained the semantic categories of both Purpose and Path, it was counted in both of the categories. In the chi-square, on the other hand, only one semantic category was applied. Thus, if a verb reflected the categories of Purpose and Path, it was counted as a Path verb. This was decided because Talmy (1985, p. 129) considered the category of Path as “the main category expressed by the satellites of most Indo-European languages....” Essentially, since Talmy placed such significance on this category, and since it can be found in both prefixes and verbs, it superseded the others. Additionally, some verbs conflated categories of Purpose and Cause/Manner and Causativity and Cause/Manner. Since these verbs were very few (sixteen total), with no one category superseding another, they were excluded from the study.

Table 24 below shows the results of the chi-square. Each cell contains the observed number of occurrences for each prefix and semantic category, with the expected frequency in parentheses below it.

**Table 24: Relationship by prefix and verbal semantic category**

Relationship	Semantic category				
Prefix	Causativity	Purpose	Path	Cause/Manner	Total
<i>vy-</i> (out)	7 (16.1)	8 (14.9)	29 (10.6)	6 (8.4)	50
<i>iz-</i> (out)	26 (15.1)	8 (14.0)	12 (10.0)	1 (7.9)	47
<i>na-</i> (on)	12 (31.8)	17 (29.5)	52 (21.0)	18 (16.7)	99
<i>o-</i> (around)	70 (41.5)	35 (38.5)	14 (27.3)	10 (21.7)	129
<i>ot-</i> (off, away from)	3 (11.9)	14 (11.0)	19 (7.8)	1 (6.2)	37
<i>po-</i>	107 (81.0)	58 (75.2)	34 (53.4)	53 (42.5)	252
<i>pro-</i> (through, past)	13 (28.0)	31 (25.9)	16 (18.4)	27 (14.7)	87
<i>s-</i> (down, off, together)	40 (52.7)	76 (48.9)	13 (34.7)	35 (27.6)	164
<i>u-</i> (away)	12 (11.9)	22 (11.0)	2 (7.8)	1 (6.2)	37
Total	290	269	191	152	902

n	902
X <sup>2</sup> statistic	277.04
p	<0.0001

The threshold of tolerance for error was decided at  $p < 0.0001$ . This analysis shows that there is a statistically significant relationship between aspectual prefixes and verbal semantics. The reason for this is that many cells show a substantial difference between observed and expected frequencies – if the observed and expected occurrences contained a similar value (for example the prefix *u-* with Causativity verbs), then there would be no significant association. The yellow (lighter) highlights in the table show that the observed occurrences were much higher than expected occurrences, while the green (darker) highlights indicate that the observed occurrences were much lower than the expected occurrences.

The two semantic categories that show significant relationships are Causativity and Path. The descriptive statistics showed that the prefixes *iz-*, *o-* and *po-* displayed slight tendencies for Causativity, and the chi-square confirms this, by illustrating that the observed numbers for this category are significantly higher than the expected numbers. Although the descriptive statistics demonstrated a tendency towards Purpose verbs, the prefixes *vy-* and *ot-* show a significant relationship with Path. Most verbs within these prefixes had the meanings of both Purpose and Path, and since it was decided that Path superseded Purpose, a significant relationship with Path is shown. The observed occurrences for the prefix *na-* in the category of Path greatly exceeded the expected occurrences, thus yielding a significant connection. Other prefixes that displayed higher observed frequencies than expected frequencies are *pro-* with Cause/Manner verbs and the prefixes *u-* and *s-* with Purpose verbs.

Most of the verbs that show higher observed occurrences in one semantic category usually display significantly lower observed occurrences in another. For example, the prefixes that are correlated with Path show lower than expected occurrences in Causativity. Conversely, the prefixes *o-* and *po-*, which correlate with Causativity, show lower than expected frequencies in Path (*o-* also shows lower frequencies with Cause/Manner). It is interesting to note that the prefix *po-*, although showing very little patterns in the descriptive statistics, displayed much higher than expected frequencies in both Causativity and Cause/Manner verbs, while much lower than expected frequencies in Purpose and Path verbs. This coincides with the hypothesis that there is a statistically significant relationship between aspectual prefixes and verbal semantics, since *po-* is one of the more vague prefixes in meaning, and the categories of Cause/Manner and Causativity are the more vague semantic categories (Causativity being the most vague). Additionally, a prefix that shows a relationship with Purpose (*s-*) is deficient in observed

occurrences with Path, while *pro-*, demonstrating a correlation with Cause/Manner, shows lower than expected incidences with Causativity. The prefixes *iz-* and *u-* simply illustrate a higher than expected frequency with Causativity and Purpose verbs, respectively, and do not appear to show any significant deficiencies in other categories. Although the descriptive statistics demonstrated slight tendencies at best, the chi-square analysis expresses a reliable relationship between aspectual prefixes and verbal semantics.

The next question to answer then, relates to the strength of this relationship. Cramer's Measure of Association<sup>4</sup> was used to determine how strong this relationship is. The computed value of this measure falls between 0 and 1, and the closer the value is to 1, the stronger the relationship is. The value for this study was 0.320, which shows that although there is a relationship between aspectual prefixes and verbal semantics, it is not a high degree of association.

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<sup>4</sup> This was calculated by taking the square root of the total chi-square value (277.04), divided by 3 times the total number of occurrences (902).

## 5. CONCLUSIONS

This preliminary study attempted to determine a semantic relationship between aspectual prefixes and the verbs that they attach to in order to become perfective. First, the concept of aspect was defined and then the system of grammatical and lexical aspect in the Russian language was outlined. Next, we discussed the idea of pure aspectual verbal pairs, and concluded that until further research is conducted on the possibility of a system other than aspectual pairs, we will assume the concept of pure aspectual verbal pairs, since it has strongly persisted in the literature on Russian aspect.

After summarizing the theoretical background on Russian aspect, this research paper described some semantic categories and the principle of conflation based on Talmy (1985). The categories used in this analysis were Purpose, Path, Cause/Manner and Causativity for verbs, and Path and Quantity/Degree to classify prefixes. These categories were used to determine a semantic connection between the verbs and their aspectual prefixes.

We then outlined the research methodology of this study. First, over 900 verbs distinguished only by aspectual prefixation were collected. We then grouped these verbs according to prefix, producing nine groups since nine prefixes were analyzed. Next, each verb was assigned one or more of the semantic categories derived from the 1985 Talmy study. Then, the meaning of each prefix was determined, based on Townsend's 1975 analysis on Russian word-formation. After the verbs and prefixes were assigned semantic classifications, a descriptive statistical analysis was initially performed to see if verbs with particular semantic features appear regularly within each prefix group.

This study then analyzed each prefix group. Many of the prefixes did show some slight tendencies to pattern. For example, the prefixes *vy-*, *pro-*, *s-* and *u-* showed some tendencies

(53%-62% of the time) to attach to verbs reflecting the semantic category of Purpose. The prefix *na-* displayed a very slight tendency (just over 50%) to attach to verbs that contain the semantic features of Purpose and Path (on). The prefixes *iz-* and *o-* showed some inclination in attaching to Causativity verbs (*iz-* 72%, *o-* 53%), while the prefix *po-* appeared to exhibit no pattern at all. The one prefix that did demonstrate a significant percentage based on these semantic categories was *ot-*, which attaches 89% of the time to verbs that reflect Purpose. Furthermore, *ot-* appeared to have a preference for *-ova-* verbs (twenty-six out of thirty-seven), which are often verbs that contain a borrowed root.

After each prefix group was examined by means of descriptive statistics, a chi-square analysis was then conducted to see if any relationships between aspectual prefixes and semantics reached statistical significance. This line of analysis did yield some patterns that reached statistical significance. For example, the prefixes *o-* and *po-* are correlated with Causativity verbs, and appear to not prefer Path verbs, while *vy-*, *ot-* and *na-* preferred Path verbs as opposed to Causativity verbs. However, although this study displayed a statistically significant relationship between aspectual prefixes and verbal semantics, it also showed that the relationship is not a very strong one.

Based on these results, this study provides some implications for further research. One is that a study similar to this one could be conducted, using different semantic categories when classifying the verbs. Since Talmy's (1985) semantic categories seemed too unconstrained, applying different semantic categories may show more statistically reliable patterns and a stronger relationship between aspectual prefixes and the semantics of the verbs that they attach to. It is possible that we should consider a larger number of semantic primitives/categories in

order to yield stronger results. A possible starting point for creating different categories may be found in Levin's 1993 work on English verb classes.

Another suggestion for further research is for a different approach to be used to determine why at least nine prefixes are used to distinguish perfectivity alone. A diachronic analysis of this grammaticization could be applied, i.e., the semantic correlations between the aspectual prefixes and verbal semantics may have been more obvious at one point, but the development and evolution of the language perhaps diluted the visibility of this relationship over time. This may explain why there is a statistically significant, but not very strong, relationship between these two variables. A more detailed examination into this topic may prove to be a useful addition to the literature on Russian verbal aspect and Russian historical linguistics.

Another question to consider is that these aspectual prefixes may fulfill other functions in addition to the semantic characteristics discussed. It may be interesting to research whether other verbal qualities (conation, reciprocity or reflexivity or the cases and prepositions that these verbs govern) can play a role in determining which prefixes attach to which verbs, and how they interact with the semantics of the verbs.

This study also provides implications for further research into topics more theoretical in nature. For example, what can these prefixes in Russian tell us about the inflection/derivation distinction, and can the concept of aspect in Russian be considered a derived notion? Additional theoretical topics could be: to propose possible Lexical Relational Structures to analyze these forms; and to propose other semantic primitives that could be involved in the selection of verbs by the different prefixes.

A final implication for further research concerns second language acquisition. Since there seems to be a connection between verbal semantics and aspectual prefixes, how does this

affect the L2 acquisition of aspectual prefixes? How do L2 learners of the Russian language differentiate which of the nine (or more) prefixes is required to correctly determine the verb's perfectivity? Would introducing such a relationship help or hinder the acquisition of these aspectual prefixes? Further research into these areas may prove to be constructive in helping L2 learners better understand certain issues in Russian aspect.



## APPENDIX A

### Verbs that take the Prefix *vy-*

Verb	Translation	Semantic Category
1. belit'	To bleach	Purpose + Path (on)
2. branit'	To scold, berate	Cause/Manner
3. gladit'	To iron, press	Purpose + Path (on)
4. dolbit'	To hollow out, bang	Purpose + Path (through)
5. dressirovat'	To train (animals)	Purpose
6. dubit'	To tan (leather)	Purpose + Path (on)
7. zubrit'	To learn by rote	Cause/Manner + Purpose
8. katat'	To press in a mangle	Purpose + Path (on)
9. kljančit'	To beg, pester	Cause/Manner
10. kolosit'sja	To become colossus (as a result of growing) – reflexive	Causativity (COS-phys.)
11. krasit'	To paint, dye	Purpose + Path (on)
12. krasit'sja	To be painted, dyed – reflexive	Causativity
13. kupat'	To bathe	Purpose + Path (on)
14. lepit'	To model, fashion, sculpture	Purpose
15. linjat'	To shed hair (animals), to molt	Causativity + Path (away)
16. mazat'sja	To dirty oneself, get dirty – reflexive	Causativity + Path (on)
17. metat'	To cast (a net for fish)	Purpose + Path (away)
18. muštrovat'	To drill (military)	Purpose
19. myt'	To wash	Purpose + Path (on)
20. pestovat'	To nurse, nurture	Purpose
21. poloskat'	To rinse	Purpose + Path (on)
22. polot'	To weed (garden)	Purpose + Path (away)
23. porot'	To whip, flog	Purpose + Path (on)
24. pučit'	To swell, bulge	Causativity (COS-phys.)
25. pučit'sja	To swell, bulge – reflexive	Causativity (COS-phys.)
26. rvat'	To vomit	Causativity + Path (away)
27. rugat'	To curse out, swear at	Cause/Manner
28. rulit'	To taxi, steer	Purpose
29. seč'	To whip, flog	Purpose + Path (on)
30. smolit'	To tar, apply pitch to	Purpose + Path (on)
31. smorkat'	To blow (nose)	Purpose + Path (away)

32. smorkat'sja	To blow one's nose	Purpose + Path (away)
33. soxnut'	To dry up, wither	Causativity (COS-phys.)
34. stirat'	To wash, launder	Purpose + Path (on)
35. strogat'	To plane (wood)	Purpose + Path (on)
36. sušit'	To make dry, dry	Causativity
37. sušit'sja	To dry, become dry – reflexive	Causativity (COS-phys.)
38. taraščit'	To stare, gape	Cause/Manner
39. taraščit'sja	To stare, gape (coll.)	Cause/Manner
40. tatuirovat'	To tattoo	Purpose + Path (on)
41. tačat'	To stitch	Purpose + Path (through)
42. tverdit'	To memorize through repetition	Purpose + Cause/Manner
43. terebit'	To pull at, tug	Cause/Manner + Path (away)
44. točit'	To make, turn out (using a lathe)	Cause/Manner
45. trjasti	To shake out	Purpose + Path (away)
46. turit'	To rudely chase away	Cause/Manner + Path (away)
47. utjužit'	To iron, press	Purpose + Path (on)
48. učit'	To learn	Purpose
49. učit'sja	To learn	Purpose
50. čistit'	To clean (out)	Purpose + Path (away)
51. čistit'sja	To become clean (cleaned out)	Causativity + Path (away)
52. školit'	To school, train, discipline	Purpose

## APPENDIX B

### Verbs that take the Prefix *iz-*

Verb	Translation	Semantic Category
1. balovat'	To spoil, pamper	Causativity (psych.)
2. vajat'	To sculpt, chisel, carve, model	Purpose + Path (on)
3. žarit'	To fry, roast, broil	Purpose
4. žarit'sja	To fry, roast (of meat, coffee) – reflexive	Causativity (phys.)
5. mel'čat'	To become smaller, more shallow	Causativity (COS-phys.)
6. mel'čit'	To crush, grind	Causativity (COS-phys.) + Path (on)
7. mjat'	To rumple, crease, wrinkle	Causativity (COS-phys.) + Path (on)
8. mjat'sja	To wrinkle, crease, become rumpled – reflexive	Causativity (COS-phys.) + Path (on)
9. nasilovat'	To rape, force, coerce	Purpose
10. rasxodovat'	To spend, expend	Purpose
11. urodovat'	To disfigure, mutilate, maim	Causativity (COS-phys.)
12. urodovat'sja	To become disfigured	Causativity (COS-phys.)
13. kalečit'	To maim, cripple	Causativity (COS-phys.)
14. koverkat'	To break, damage, wreck, distort, butcher (a language)	Causativity (COS-phys.)
15. komkat'	To crumple	Purpose
16. kromsat'	To cut unevenly	Cause/Manner
17. peč'	To bake	Purpose
18. peč'sja	To bake, be baked – reflexive	Causativity (COS-phys.)
19. polosovat'	To leave streaks on, to flog	Purpose + Path (on)
20. portit'	To spoil, damage, mar, impair, corrupt	Causativity (COS-phys., psych.)
21. portit'sja	To become spoiled – reflexive	Causativity (COS-phys., psych.)
22. pugat'	To frighten, scare	Causativity (COS-psych.)
23. pugat'sja	To be frightened, scared – reflexive	Causativity (psych.)
24. tomit'	To torment	Causativity (COS-psych.)
25. tomit'sja	To be tormented – reflexive	Causativity (psych.)
26. trepat'	To fray, wear out	Causativity (COS-phys.)

27. trepat'sja	To be frayed – reflexive	Causativity (phys.)
28. truxljavet'	To mold, rot	Causativity (COS-phys.)

Additional verbs that take the prefix *iz-/is-* to become perfective (*iz-/is-* in these instances reflect the semantic category Quantity/Degree, in that an intensive meaning is added):

1. mazat'	to soil, dirty	Causativity + Path (on)
2. mazat'sja	to become soiled, get dirty	Causativity + Path (on)
3. marat'	to soil, dirty	Causativity
4. marat'sja	to become soiled, get dirty	Causativity
5. mučit'	to torment, plague	Causativity
6. mučit'sja	to suffer, be plagued with	Causativity
7. korežit'	to warp, bend, twist	Causativity
8. korežit'sja	to become warped	Causativity
9. krošit'	to chop up, crumble	Purpose
10. krošit'sja	to crumble, disintegrate	Causativity
11. kupat'	to bathe	Purpose + Path (on)
12. pakostit'	to soil, dirty, spoil	Causativity + Path (on)
13. pačkat'	to soil, dirty, stain	Causativity + Path (on)
14. pačkat'sja	to become dirty, soiled	Causativity + Path (on)
15. toloč'	to crush, pound, pulverize	Purpose + Path (on)
16. tratit'	to spend, use up, waste	Purpose
17. tratit'sja	to spend money, to be spent	Causativity
18. tupit'	to blunt, dull	Purpose
19. tupit'sja	to be blunt	Causativity

## APPENDIX C

### Verbs that take the Prefix *na-*

Verb	Translation	Semantic Category
1. balamutit'	To disturb, worry	Causativity (psych.)
2. bedokurit'	To make mischief (coll.)	Purpose
3. bezobrazničat'	To carry on, behave disgracefully (coll.)	Cause/Manner
4. belit'	To white (face) with ceruse	Purpose + Path (on)
5. bludit'	To wander (in life)	Cause/Manner
6. bronzirovat'	To bronze	Purpose + Path (on)
7. buzit'	To create a scandal/scene (coll.)	Purpose
8. vaksit'	To shine, polish (shoes) (coll.)	Purpose + Path (on)
9. volgnut'	To become damp, wet	Causativity (COS-phys.)
10. vonjat'	To stink (coll.)	Cause/Manner
11. voščit'	To wax	Purpose + Path (on)
12. vrat'	To lie, tell lies (coll.)	Purpose
13. vredit'	To harm, damage, be injurious to	Causativity
14. vjučit'	To load (an animal)	Purpose + Path (on)
15. gljancevat'	To apply a luster/gloss (on something)	Purpose + Path (on)
16. gravirovat'	To engrave, etch	Purpose + Path (on)
17. grimirovat'	To make up, put make-up on (theater)	Purpose + Path (on)
18. gromozdit'	To pile up	Purpose + Path (on)
19. gromozdit'sja	To pile up – reflexive	Causativity + Path (on)
20. grubit'	To make rude/offensive remarks to, be insulting to	Cause/Manner
21. grubijanit'	To make rude/offensive remarks to, be insulting to	Cause/Manner
22. grjaznit'	To litter, leave something dirty	Purpose + Path (on)
23. deboširit'	To carry on, run wild	Cause/Manner
24. derzit'	To be rude, insolent to	Cause/Manner
25. drait'	To scrub, swab	Purpose + Path (on)
26. dušit'	To perfume	Purpose + Path (on)
27. dymit'	To smoke, give off smoke	Causativity
28. erundit'	To speak nonsense	Cause/Manner
29. imenovat'	To name	Purpose
30. imenovat'sja	To be called – reflexive	Causativity

31. kanifolit'	To rub with rosin	Purpose + Path (on)
32. kapat'	To pour one drop at a time, to spill	Cause/Manner + Path (on)
33. klevetat'	To slander	Purpose
34. klepat'	To rivet	Purpose
35. kljauzničat'	To tell petty lies, spread malicious gossip	Purpose + Cause/Manner
36. kolobrodit'	To carouse, live it up	Cause/Manner
37. kopit'	To accumulate, amass	Purpose
38. kopit'sja	To accumulate, pile up – reflexive	Causativity
39. kormit'	To feed, suckle, nurse	Purpose
40. krasit'sja	To put make-up on	Purpose + Path (on)
41. kraxmalit'	To starch	Purpose + Path (on)
42. kropat'	To write/compose slowly, with difficulty	Cause/Manner + Path (on)
43. krošit'	To spill crumbs	Causativity + Path (on)
44. kuksit'sja	To sulk, mope (coll.)	Cause/Manner
45. kurolesit'	To make mischief (coll.)	Purpose
46. lgat'	To lie, tell lies	Purpose
47. linovat'	To rule, draw lines on	Purpose + Path (on)
48. loščit'	To buff, polish	Purpose + Path (on)
49. mazat'	To smear with, paint poorly	Cause/Manner + Path (on)
50. mazat'sja	To put on (make-up, salve)	Purpose + Path (on)
51. malevat'	To paint (coll.)	Purpose + Path (on)
52. marat'	To scribble (coll.)	Cause/Manner + Path (on)
53. maslit'	To butter, grease (coll.)	Purpose + Path (on)
54. melit'	To rub with chalk	Cause/Manner + Path (on)
55. mozolit'	To get calluses on	Causativity + Path (on)
56. morščit'	To become creased, pucker (coll.)	Causativity + Path (on)
57. morščit'sja	To become wrinkled, furrowed – reflexive	Causativity + Path (on)
58. mudrit'	To make things unnecessarily complicated (coll.)	Cause/Manner
59. musorit'	To litter	Purpose + Path (on)
60. mylit'	To soap, lather	Purpose + Path (on)
61. mjaknut'	To become soft, flabby	Causativity (COS-phys.)
62. nizat'	To string, thread	Purpose + Path (through)
63. pakostit'	To soil, dirty, spoil (coll.)	Causativity
64. pečatat'	To print	Purpose + Path (on)
65. pečatat'sja	To be printed, be in print	Cause/Manner + Path (on)
66. pisat'	To write	Purpose + Path (on)
67. pisat'sja	To be written	Causativity + Path (on)

68. pičkat'	To stuff (with food); to cram	Purpose
69. pomadit'	To pomade one's hair, to paint one's lips	Purpose + Path (on)
70. porožit'	To fall lightly (snow)	Cause/Manner + Path (on)
71. portačit'	To do something poorly	Cause/Manner
72. prokazničat'	To play pranks, horse around	Cause/Manner
73. proročit'	To prophesy	Purpose
74. pružinit'(sja)	To be springy, resilient	Cause/Manner
75. pryskat'	To sprinkle	Purpose + Path (on)
76. pudrit'	To powder	Purpose + Path (on)
77. pudrit'sja	To powder one's face/nose	Purpose + Path (on)
78. risovat'	To draw	Purpose + Path (on)
79. rumjanit'	To apply rouge to	Purpose + Path (on)
80. rumjanit'sja	To put on rouge	Purpose + Path (on)
81. sandalit'	To rub (to brilliance)	Purpose + Path (on)
82. svinjačit'	To act like a pig	Cause/Manner
83. skandalit'	To cause a fuss, kick up a row	Cause/Manner
84. sledit'	To leave footprints (coll.)	Purpose + Path (on)
85. sljunit'	To moisten with saliva	Cause/Manner + Path (on)
86. smešit'	To make someone laugh	Causativity
87. sorit'	To litter	Purpose + Path (on)
88. stučat'	To wear out	Causativity
89. točit'	To sharpen, hone	Purpose
90. trenirovat'	To coach, train	Purpose
91. trusit'	To pour by shaking out	Cause/Manner + Path (on)
92. xamit'	To be rude, act boorish	Cause/Manner
93. xoxlit'	To ruffle	Purpose
94. xoxlit'sja	To ruffle its feathers (bird); to act glum	Causativity
95. carapat'	To scribble, scrawl	Cause/Manner + Path (on)
96. celit'sja	To aim at/for	Path (on/towards)
97. čadit'	To smoke, emit fumes	Causativity
98. černit'	To blacken, make black	Purpose
99 škodit'/škodničat'	To secretly make mischief	Cause/Manner
100. elektrizovat'	To electrify, charge with electricity	Purpose
101. jabledničat'	To tell/tattle on, spread malicious gossip about	Purpose + Cause/Manner

## APPENDIX D

### Verbs that take the Prefix *o-*

Verb	Translation	Semantic Category
1. vetšat'	To deteriorate	Causativity (COS-phys.)
2. bednet'	To become poor	Causativity (COS-psych.)
3. bezobrazit'	To make unattractive, disfigure, mutilate	Purpose
4. bezobrazit'sja	To disfigure – reflexive	Causativity (COS-phys.)
5. besčestit'	To disgrace, dishonor	Causativity
6. kornat'	To cut unevenly or too short	Cause/Manner
7. linjat'	To fade	Causativity
8. lupit'	To peel skin/bark from	Purpose + Path (away)
9. lupit'sja	To peel off, come off – reflexive	Causativity + Path (away)
10. luščit'	To shell, husk, hull	Purpose + Path (away)
11. lyset'	To become bald	Causativity (COS-phys.)
12. melet'	To become shallow	Causativity
13. moročit'	To trick, fool (coll.)	Purpose
14. murovat'	To edge	Purpose
15. naglet'	To become (more) brazen	Causativity
16. niščat'	To become impoverished	Causativity
17. všivet'	To become infested with lice	Causativity
18. bogotvorit'	To worship, idolize	Purpose
19. zlit'	To anger	Causativity
20. zlit'sja	To become angry	Causativity (COS-psych.)
21. radovat'	To gladden	Causativity
22. radovat'sja	To be glad	Causativity
23. revizovat'	To inspect, audit	Purpose
24. rugat'	To scold	Cause/Manner
25. strič'	To cut (hair)	Purpose
26. ščipat'	To pluck	Purpose + Path (away)
27. jagnit'sja	To give birth (ewe)	Purpose
28. gloxnut'	To become deaf	Causativity (COS-phys.)
29. grabit'	To rob, sack, plunder, pillage	Purpose
30. grubet'	To become rough, coarse	Causativity (COS-phys./psych.)
31. derevenet'	To become stiff, numb	Causativity (COS-phys.)
32. dičat'	To become wild, shy, unsociable	Causativity (COS-psych.)
33. drjabnut'	To become flabby	Causativity (COS-phys.)



34. drjaxlet'	To become decrepit	Causativity (COS-phys.)
35. duračit'	To fool, make a fool of	Purpose
36. duret'	To go crazy, lose one's wits	Causativity (COS-psych.)
37. durmanit'	To cloud (someone's) mind/ senses, befuddle	Purpose
38. žerebit'sja	To foal	Purpose
39. životvorit'	To bring back to life, revive, resuscitate	Purpose
40. žiret'	To get fat	Causativity (COS-phys.)
41. zabotit'	To worry, trouble, concern	Causativity
42. znakomit'	To give someone info about something	Purpose
43. znakomit'sja	To receive info about something	Causativity
44. zjabnut'	To suffer from the cold	Cause/Manner
45. kamenet'	To turn to stone, petrify, stiffen	Causativity (COS-phys./ psych.)
46. kol'čevat'	To ring (bird's leg)	Purpose + Path (around)
47. kantovat'	To trim with piping	Purpose + Path (around)
48. kornat'	To crop, cut short	Cause/Manner
49. kostenet'	To become numb	Causativity (COS-phys.)
50. kotit'sja	To have kittens	Purpose
51. kočenet'	To become numb (from the cold)	Causativity (COS-phys.)
52. krepnut'	To grow stronger	Causativity (COS-phys.)
53. krestit'sja	To be baptized	Causativity
54. krivet'	To become blind (in one eye)	Causativity
55. kropit'	To sprinkle	Purpose + Path (on)
56. kruglet'	To become round (coll.)	Causativity (COS-phys.)
57. kruglit'	To make round	Purpose
58. ledenit'	To turn to ice, become cold	Causativity (COS-phys./ psych.)
59. mertvet'	To become numb/paralyzed with fear	Causativity (COS-psych.)
60. nemet'	To be speechless, dumbfounded	Cause/Manner
61. palit'	To singe	Causativity
62. paršivet'	To become mangy	Causativity (COS-phys.)
63. pečalit'	To sadden	Causativity
64. pečalit'sja	To be saddened	Causativity
65. plešivet'	To grow bald	Causativity (COS-phys.)
66. plombirovat'	To apply a seal	Purpose + Path (on)
67. plošat'	To make a mistake (coll.)	Cause/Manner
68. poganit'	To soil, dirty, defile	Purpose

69. podlet'	To become mean, base, miserable	Causativity (COS-psych.)
70. pozorit'	To disgrace	Purpose
71. porosit'sja	To give birth (pig, badger)	Purpose
72. poročit'	To sully, besmirch (reputation)	Purpose
73. pošlet'	To become common, petty, shallow, trite	Causativity
74. poëtizirovat'	To present poetically	Cause/Manner
75. prixodovat'	To credit (bookkeeping)	Purpose
76. protestovat'	To protest	Causativity
77. pryščavet'	To be covered with pimples	Cause/Manner
78. publikovat'	To publish	Purpose
79. pustet'	To become empty, deserted	Causativity (COS-phys.)
80. puxnut'	To swell, become swollen	Causativity (COS-phys.)
81. p'janit'	To become drunk	Causativity
82. robet'	To be timid, shy	Causativity
83. salit'	To grease	Purpose + Path (on)
84. sveževat'	To skin, dress (animal)	Purpose + Path (away)
85. svidetel'stvovat'	To testify, attest to	Purpose
86. serčat'	To get angry	Causativity (COS-psych.)
87. sipnut'	To become hoarse	Causativity (COS-phys.)
88. skalit'sja	To bare one's teeth	Purpose
89. skal'pirovat'	To scalp	Purpose + Path (away)
90. skandalit'sja	To make a fool of oneself	Cause/Manner
91. skoromit'sja	To eat (modestly) during fast	Cause/Manner
92. skudet'	To become depleted	Causativity
93. slabet'	To weaken, become weak	Causativity
94. slabnut'	To weaken, become weak (coll.)	Causativity
95. slavit'	To glorify	Purpose
96. slepnut'	To go blind	Causativity (COS-phys.)
97. smelet'	To become bolder	Causativity (COS-psych.)
98. solovet'	To become faded, limp, withered	Causativity (COS-phys.)
99. sramit'	To shame, disgrace (coll.)	Purpose
100. steklenet'	To become like glass	Causativity (COS-phys.)
101. stervenet'	To become fierce, violent (coll.)	Causativity (COS-psych.)
102. stolbenet'	To freeze (from terror, shock)	Causativity (COS-psych.)
103. studit'	To cool, chill	Purpose
104. telit'sja	To calve	Purpose
105. toščat'	To become thin, gaunt	Causativity (COS-phys.)

106. trezvet'	To sober up, become sober	Causativity
107. tupet'	To become dull	Causativity
108. tjaželet'	To become/grow heavy	Causativity (COS-phys.)
109. xamet'	To become boorish	Causativity (COS-psych.)
110. xmelet'	To become tipsy, high (coll.)	Causativity
111. xripnut'	To become hoarse	Causativity
112. xromet'	To become lame	Causativity (COS-phys.)
113. carapat'	To scratch	Purpose + Path (on)
114. cepenet'	To become numb, rigid	Causativity
115. červivet'	To become wormy	Causativity
116. černit'	To blacken, slander, defame	Purpose
117. čerstvet'	To become callous, hard-hearted	Causativity (COS-psych.)
118. činit'	To sharpen (pencil)	Purpose
119. švartovat'	To moor (a ship)	Purpose
120. švartovat'sja	To moor – reflexive	Causativity
121. šeludivet'	To become mangy	Causativity
122. šel'movat'	To disparage, run down (coll.)	Purpose
123. šikat'	To hiss (at an actor)	Purpose
124. šparit'	To scald	Purpose
125. štrafovat'	To fine, penalize	Purpose
126. štukaturit'	To plaster	Purpose + Path (on)
127. ščenit'sja	To have pups	Purpose
128. ščetinit'sja	To bristle	Causativity
129. ščipat'	To pluck	Purpose + Path (away)

## APPENDIX E

### Verbs that take the Prefix *ot-*

Verb	Translation	Semantic Category
1. čerenkovat'	To graft, take a cutting of	Purpose
2. šlifovat'	To polish, burnish	Purpose + Path (on)
3. šampovat'	To press, stamp, punch	Purpose + Path (on)
4. frezerovat'	To mill, cut	Purpose
5. ciklevat'	To smooth, even a wooden surface	Purpose + Path (on)
6. čekanit'	To mint, coin, engrave, emboss	Purpose + Path (on)
7. utjužit'	To iron, press	Purpose + Path (on)
8. fil'trovat'	To filter, screen out	Purpose + Path (away)
9. retuširovat'	To retouch (photograph)	Purpose + Path (on)
10. recenzirovat'	To review	Purpose
11. saljutovat'	To salute	Purpose
12. pressovat'	To press	Purpose + Path (on)
13. raportovat'	To report	Purpose
14. reagirovat'	To react to	Causativity
15. regulirovat'	To regulate	Purpose
16. redaktirovat'	To edit	Purpose
17. rekomendovat'	To recommend	Causativity
18. nikelirovat'	To nickel, plate with nickel	Purpose + Path (on)
19. parirovat'	To parry, ward off	Purpose + Path (away)
20. polirovat'	To polish	Purpose + Path (on)
21. poloskat'	To rinse	Purpose
22. prazdnovat'	To celebrate	Purpose
23. remontirovat'	To repair, renovate, refurbish, overhaul	Purpose
24. lakirovat'	To lacquer, varnish	Purpose + Path (on)
25. lupit'	To beat, thrash	Purpose + Path (on)
26. lupcevat'	To beat, thrash	Purpose + Path (on)
27. mobilizirovat'	To mobilize	Purpose
28. repetirovat'	To rehearse	Purpose
29. dubasit'	To beat, thrash	Purpose + Path (on)
30. kozyrjat'	To salute (mil.)	Purpose
31. kološmatit'	To beat, thrash	Purpose + Path (on)
32. korrektirovat'	To correct, adjust	Purpose
33. restavrirovat'	To restore	Purpose
34. mstit'	To take revenge on	Purpose
35. potet'	To become misty, steamed up	Causativity

36. rugat'	To swear at, curse out	Causativity
37. tuzit'	To thrash, pummel (coll.)	Purpose + Path (on)

## APPENDIX F

### Verbs that take the Prefix *po-*

Verb	Translation	Semantic Category
1. bagrovet'	To turn crimson, flush	Causativity
2. belet'	To turn white	Causativity
3. belit'	To whitewash, whiten	Purpose + Path (on)
4. blagodarit'	To thank	Cause/Manner
5. blednet'	To become pale	Causativity
6. božit'sja	To swear	Cause/Manner
7. bojat'sja	To beware/be careful of	Causativity
8. branit'sja	To quarrel, swear, curse	Cause/Manner
9. bratat'sja	To fraternize	Cause/Manner
10. brezgat'/brezgovat'	To be squeamish about, have an aversion to	Causativity
11. brit'	To shave	Purpose + Path (on)
12. buret'	To become brown, turn brown	Causativity
13. valit'sja	To fall, collapse, topple over – reflexive	Cause/Manner + Path (down)
14. verit'	To believe	Causativity
15. verit'sja	To be believed	Causativity
16. veselet'	To cheer up, become cheerful	Causativity
17. vzdorit'	To argue, quarrel	Cause/Manner
18. vzroslet'	To grow up, become an adult	Causativity
19. vinit'sja	To realize one's own guilt (coll.)	Cause/Manner
20. vlažnet'	To become (more) important	Causativity
21. vleč'	To draw, drag, attract	Cause/Manner
22. vlijat'	To influence	Causativity
23. gasit'	To extinguish, put out	Purpose
24. gasnut'	To go out, fade, wane	Causativity
25. gibnut'	To be killed, perish	Causativity
26. gladit'	To pet, stroke, pat	Purpose + Path (on)
27. glupet'	To become foolish, stupid	Causativity
28. gljadet'	To look at	Purpose
29. gljadet'sja	To look at oneself	Purpose
30. gnušat'sja	To disdain, have an aversion to	Cause/Manner

31. golubet'	To turn/become blue	Causativity
32. grozit'	To threaten	Purpose
33. grozit'sja	To threaten to (coll.)	Purpose
34. gruzit'	To load cargo	Purpose + Path (on)
35. gruzit'sja	To take on cargo	Purpose + Path (on)
36. gruznet'	To become (more) heavy, weighty	Causativity (COS-phys.)
37. gryzt'sja	To fight (of animals)	Cause/Manner
38. gubit'	To ruin, destroy, kill	Causativity
39. davit'sja	To choke – reflexive	Causativity
40. darit'	To give as a gift	Purpose + Cause/Manner
41. dejstvovat'	To do, act	Purpose
42. delikatničat'	To be overly delicate	Cause/Manner
43. deševat'	To go down in price, become cheaper	Causativity
44. divit'sja	To wonder, marvel at (coll.)	Cause/Manner
45. dobret'	To become kind, kinder	Causativity (COS-phys.)
46. doit'	To milk	Purpose + Path (away)
47. dorožat'	To go up in price, become more expensive	Causativity
48. doxnut'	To die (of animals)	Causativity
49. drat'sja	To fight	Cause/Manner
50. družit'sja	To become friends with	Causativity
51. dumat'	To think	Cause/Manner
52. durnet'	To lose one's beauty, become less attractive	Causativity (COS-phys.)
53. est'	To have something to eat	Purpose
54. žalet'	To pity, feel sorry for, regret	Causativity
55. žalovat'	To grant, award, bestow	Purpose
56. žalovat'sja	To complain about	Cause/Manner
57. želat'	To wish for, desire	Cause/Manner
58. želtet'	To yellow, turn yellow	Causativity (COS-phys.)
59. ženit'sja	To get married	Purpose
60. žertvovat'	To sacrifice, contribute, donate	Purpose
61. žuxnut'	To wither, dry up	Causativity (COS-phys.)
62. zabotit'sja	To care for, look after	Cause/Manner
63. zavidovat'	To envy, be jealous of	Causativity
64. zavtrakat'	To have breakfast	Purpose
65. zaimstvovat'	To borrow	Purpose
66. zarit'sja	To covet (coll.)	Cause/Manner
67. zvat'	To call, invite	Purpose
68. zvonit'	To phone, call, ring	Purpose
69. zvonit'sja	To ring – reflexive	Causativity

70. zdorovat'sja	To greet, say hello to	Purpose
71. zdorovet'	To grow healthy, stronger (coll.)	Causativity (COS-phys.)
72. zelenet'	To become/turn green	Causativity (COS-phys.)
73. zelenit'	To make/paint green	Purpose + Path (on)
74. znakomit'	To acquaint, introduce	Purpose
75. znakomit'sja	To become acquainted/familiar with	Causativity
76. zolotit'	To gild	Purpose + Path (on)
77. kalečit'	To cripple, maim, pervert	Causativity (COS-phys.)
78. karat'	To punish	Purpose
79. kajat'sja	To repent, be sorry, confess	Cause/Manner
80. kljast'sja	To swear, vow	Cause/Manner
81. kolebat'	To shake	Causativity
82. kolebat'sja	To shake, sway, hesitate – reflexive	Causativity + Cause/Manner
83. kolotit'	To strike, bang, pound	Purpose + Path (on)
84. kolotit'sja	To bang – reflexive	Causativity + Path (on)
85. korežit'	To warp, bend, twist	Causativity
86. korobit'	To warp	Causativity
87. korobit'sja	To curl, buckle – reflexive	Causativity
88. kosit'sja	To slant	Cause/Manner
89. krasit'	To paint, dye	Purpose + Path (on)
90. krasnet'	To turn/become red, blush	Causativity
91. krivit'	To bend out of shape	Causativity
92. krivit'sja	To become bent out of shape	Causativity
93. krupnet'	To grow larger	Causativity (COS-phys.)
94. kumit'sja	To become godparent to someone's child	Purpose
95. kušat'	To eat (informal)	Purpose
96. lakomit'sja	To feast on	Purpose + Cause/Manner
97. lajat'sja	To bark at, swear at	Cause/Manner
98. levet'	To move to the left politically	Causativity
99. legčat'	To abate, moderate	Causativity
100. lilovet'	To turn, become purple	Causativity
101. linjat'	To fade, run (of colors)	Causativity
102. lomat'sja	To act unnaturally	Cause/Manner
103. ludit'	To tin	Purpose + Path (on)
104. l'stit'	To flatter	Cause/Manner
105. ljubovat'sja	To admire, watch with pleasure	Cause/Manner
106. ljubopytstvovat'	To be curious of	Causativity
107. manit'	To beckon, draw, attract	Cause/Manner



108. menjat'	To exchange	Purpose
109. menjat'sja	To exchange – reflexive	Causativity
110. mereščit'sja	To seem, imagine	Cause/Manner
111. merit'sja	To measure – reflexive	Causativity
112. merknut'	To grow dim, fade, wane	Causativity
113. mertvet'	To become numb	Causativity (COS-psych.)
114. mešat'	To bother, disturb	Causativity
115. milovat'	To pardon, show mercy to	Cause/Manner
116. mirit'	To reconcile, restore peace (between people)	Purpose
117. mirit'sja	To become reconciled with	Causativity
118. množit'	To increase, multiply, augment	Purpose
119. molodet'	To get younger, become young again	Causativity (COS-psych.)
120. močit'sja	To urinate	Causativity + Path (away)
121. mračnet'	To become dark, gloomy	Causativity
122. mutit'	To dull, make unclear/ murky	Causativity
123. mutit'sja	To become dulled (senses)	Causativity
124. mutnet'	To become cloudy, muddy	Causativity (COS-phys.)
125. myt'	To clean	Purpose + Path (on)
126. mjat'sja	To wrinkle – reflexive	Causativity + Path (on)
127. nadejat'sja	To hope (for)	Cause/Manner
128. nervničat'	To get nervous, antsy	Causativity (COS-psych.)
129. niknut'	To droop	Cause/Manner
130. nraivit'sja	To like	Cause/Manner
131. njuxat'	To sniff, smell	Causativity
132. obedat'	To have lunch	Purpose
133. obešat'	To promise	Purpose
134. parit'sja	To steam, sweat (in a sauna)	Purpose
135. penjat'	To blame, scold, chide	Cause/Manner
136. perčit'	To put pepper on	Purpose + Path (on)
137. platit'sja	To pay the penalty	Cause/Manner
138. plotnet'	To grow stout	Causativity (COS-phys.)
139. poldničat'	To have an afternoon snack (coll.)	Purpose
140. polnet'	To put on weight, get fat	Causativity (COS-phys.)
141. potčevat'	To treat someone (to food, drink, etc.) (coll.)	Purpose
142. pravet'	To shift to the right politically	Causativity
143. privetstvovat'	To greet, welcome	Purpose
144. probovat'	To try, taste, test	Purpose
145. prosit'	To ask a favor, request	Purpose

146. prosit'sja	To ask, apply for	Purpose
147. pytat'sja	To attempt, try, endeavor	Purpose
148. radet'	To oblige, be concerned	Cause/Manner
149. redet'	To thin out	Causativity + Path (away)
150. rekomendovat'	To recommend, give advice	Causativity
151. rodnit'	To unite, bring together	Causativity
152. rodnit'sja	To become related	Causativity
153. rozovet'	To turn, become pink	Causativity (COS-phys.)
154. rugat'sja	To swear, use bad language	Cause/Manner
155. ručat'sja	To vouch for, guarantee	Cause/Manner
156. ryžet'	To become, turn orange	Causativity (COS-phys.)
157. ruxlet'	To become soft, lose firmness	Causativity (COS-phys.)
158. saxarit'	To sugar, sweeten	Purpose
159. svatat'sja	To propose to	Purpose
160. svežet'	To become cool	Causativity
161. svežet' <sup>2</sup>	To have a healthy color (of a person)	Cause/Manner
162. svetit'	To shine a light on (so that something is seen)	Purpose + Path (on)
163. svetlet'	To brighten, become bright	Causativity
164. sedet'	To turn gray (of hair)	Causativity (COS-phys.)
165. selit'sja	To settle, take up residence	Purpose
166. serebrit'	To silver	Purpose + Path (on)
167. seret'	To turn gray	Causativity (COS-phys.)
168. setovat'	To complain, lament	Cause/Manner
169. seč'sja	To split (of hairs), to fray (of fabric)	Causativity + Path (away)
170. sinet'	To turn, become blue	Causativity (COS-phys.)
171. skupit'sja	To be stingy, to skimp	Cause/Manner
172. skučnet'	To look bored, glum (coll.)	Cause/Manner
173. slastit'	To sweeten	Purpose
174. sledovat'	To follow	Purpose
175. služit'	To serve	Purpose
176. slušat'	To listen	Purpose
177. slušat'sja	To listen to, obey	Purpose
178. sljunit'	To moisten with saliva	Purpose + Path (on)
179. smet'	To dare (to do something)	Purpose
180. smejat'sja	To laugh	Causativity
181. smotret'	To watch, look	Purpose
182. smotret'sja	To look at oneself	Purpose
183. smuglet'	To become dark-complexioned	Causativity (COS-phys.)
184. sovestit'sja	To feel ashamed	Causativity
185. sovetovat'	To advise	Purpose

186. sovetovat'sja	To seek the advice of	Purpose
187. sodejstvovat'	To assist, further, promote	Purpose
188. solit'	To salt, pickle	Purpose
189. solovet'	To become drowsy	Causativity
190. spešit'	To hurry, rush	Cause/Manner
191. sposobstvovat'	To assist, be conducive to	Purpose
192. ssorit'	To cause a quarrel between	Causativity
193. ssorit'sja	To quarrel	Cause/Manner
194. starat'sja	To try	Purpose
195. staret'	To grow/get old, to age	Causativity
196. stesnjat'sja	To be afraid, ashamed, shy	Causativity
197. stlat'	To lay (carpet), make a bed	Purpose + Path (on)
198. storonit'sja	To stand/step aside, make way	Purpose
199. stradat'	To suffer	Cause/Manner
200. stroit'	To build, construct	Purpose
201. stroit'sja	To be built	Causativity
202. stučat'	To knock, rap, rattle	Causativity + Path (on)
203. stydit'sja	To be ashamed of	Causativity
204. sulit'sja	To promise (coll.)	Purpose
205. sčitat'	To count, to consider	Purpose
206. sčitat'sja	To be considered – reflexive	Causativity
207. teplet'	To become warm, warm up	Causativity
208. teret'sja	To rub up against	Purpose + Path (on)
209. terjat'	To lose	Causativity
210. terjat'sja	To be lost	Causativity
211. tešit'	To amuse, entertain, gratify + reflexive	Causativity
212. tolstet'	To get fat, gain weight	Causativity (COS-phys.)
213. tonut'	To sink	Cause/Manner + Path (down)
214. topit'	To sink (on purpose)	Purpose + Path (down)
215. toropit'sja	To rush, hurry	Cause/Manner
216. travit'	To trample down	Purpose + Path (on)
217. tratit'	To waste, spend, use up	Purpose
218. tratit'sja	To spend one's money	Purpose
219. trebovat'	To demand, require; to be required, needed	Causativity
220. trevožit'	To disturb, disrupt	Causativity
221. trepat'	To dishevel, blow about, stroke	Cause/Manner
222. treskat'sja	To crack, become chapped	Causativity
223. tusknet'	To grow dim, lose luster	Causativity
224. tuxnut'	To go out (of something)	Causativity

	burning)	
225. tušit'	To put out, extinguish, turn off	Purpose
226. tučnet'	To grow fat, put on weight	Causativity (COS-phys.)
227. tjaġat'sja	To compete/contend with (coll.)	Cause/Manner
228. tjaželet'	To become/grow heavy	Causativity (COS-phys.)
229. tjanut'	To pull, tug, drag, stretch	Cause/Manner
230. tjanut'sja	To be stretched	Cause/Manner + Causativity
231. uŷinat'	To have dinner	Purpose
232. umnet'	To grow wiser	Causativity (COS-psych.)
233. xvalit'	To praise	Purpose + Cause/Manner
234. xvalit'sja	To boast, brag about	Cause/Manner
235. xvastat'	To boast, brag about	Cause/Manner
236. xlopotat'	To seek, try to get	Purpose
237. xolodat'	To get cold	Causativity
238. xolodet'	To grow cold (from fear)	Causativity (COS-psych.)
239. xolodnet'	To get cold	Causativity
240. xoromit'	To bury	Purpose + Path (down)
241. xorošet'	To get prettier, more attractive	Causativity (COS-psych.)
242. xrabret'	To get braver	Causativity (COS-psych.)
243. xudet'	To get thin, lose weight	Causativity (COS-phys.)
244. capat'sja	To bicker, squabble	Cause/Manner
245. carapat'	To scribble (coll.)	Cause/Manner + Path (on)
246. celovat'sja	To kiss	Purpose + Path (on)
247. ceremonit'sja	To stand on ceremony	Cause/Manner
248. černet'	To turn black	Causativity
249. čerstvet'	To become stale (bread)	Causativity
250. češat'	To scratch (oneself)	Purpose + Path (on)
251. čistit'	To clean	Purpose + Path (on)
252. čudit'sja	To seem, imagine	Cause/Manner
253. šabašit'	To quit/blow off work (coll.)	Purpose + Cause/Manner
254. ševelit'	To move, wiggle, stir	Causativity
255. šutit'	To joke	Cause/Manner
256. ščadit'	To spare, have mercy on	Cause/Manner
257. ščekotat'	To tickle (someone, thing)	Causativity + Path (on)
258. ščupat'	To feel, touch	Causativity

## APPENDIX G

### Verbs that take the Prefix *pro-*

Verb	Translation	Semantic Category
1. analizirovat'	To analyze	Purpose
2. annotirovat'	To annotate	Purpose
3. barabanit'	To drum	Purpose + Path (on)
4. basit'	To speak or sing in a bass voice (coll.)	Cause/Manner
5. brenčat'	To jingle, clink (inanimate objects)	Causativity
6. brexat'	To tell lies (coll.)	Purpose
7. brjuzžat'	To grumble, grouch	Cause/Manner
8. brjacat'	To clank, jingle, clatter	Causativity
9. bubnit'	To mumble, mutter (coll.)	Cause/Manner
10. budit'	To awaken, arouse (fig.)	Causativity
11. buravit'	To bore, drill	Purpose + Path (through)
12. burit'	To bore, drill, drill through	Purpose + Path (through)
13. burčat'	To mumble, mutter	Cause/Manner
14. ventilirovat'	To ventilate	Purpose + Path (through)
15. vereščat'	To chirp	Cause/Manner
16. veščat'	To prophesy	Purpose
17. vejat'	To winnow	Cause/Manner
18. voronit'	To burnish	Purpose + Path (on)
19. vjalit'	To cure (meat) by drying	Purpose + Cause/Manner
20. gnevit'	To become angry	Causativity
21. gogotat'	To cackle (geese)	Cause/Manner
22. golosovat'	To vote	Purpose
23. gorknut'	To turn rancid	Causativity
24. gremet'	To thunder, rumble	Causativity
25. gromyxat'	To rumble, clatter (coll.)	Causativity
26. groxotat'	To rumble, howl with laughter	Cause/Manner
27. gudet'	To buzz, hum, drone	Causativity
28. dezinficirovat'	To disinfect	Purpose + Path (away)
29. deklamirovat'	To recite, declaim	Cause/Manner
30. demonstrirovat'	To demonstrate	Purpose
31. diktovat'	To dictate	Purpose
32. dlit'sja	To last	Purpose + Path (through)
33. dolbit'	To hollow, gouge out	Purpose + Path (through)
34. dublirovat'	To duplicate, dub	Purpose
35. zvenet'	To ring, jingle	Causativity

36. zevat'	To miss one's chance, let opportunity slip by (coll.)	Causativity
37. zimovat'	To spend the winter, winter over	Purpose + Path (through)
38. illjustirovat'	To illustrate	Purpose
39. inspektirovat'	To inspect	Purpose
40. instruktirovat'	To instruct, brief	Purpose
41. intervjuirovat'	To interview	Purpose
42. informirovat'	To inform	Purpose
43. kvakat'	To ribbit, croak (frog)	Cause/Manner
44. kisnut'	To turn sour	Causativity
45. kommentirovat'	To comment	Purpose
46. kompostirovat'	To punch (ticket)	Purpose + Path (through)
47. konspektirovat'	To abstract, make an abstract of	Purpose
48. konsul'tirovat'	To advise, give advice to	Purpose
49. konsul'tirovat'sja	To consult (with)	Purpose
50. kontrolirovat'	To check, monitor	Purpose
51. korrektirovat'	To correct, adjust, proofread	Purpose
52. kukarekat'	To crow (rooster)	Cause/Manner
53. kukovat'	To cuckoo	Cause/Manner
54. lajat'	To bark (dog)	Cause/Manner
55. lepetat'	To babble, prattle	Cause/Manner
56. lopotat'	To mumble, mutter (coll.)	Cause/Manner
57. marširovat'	To march	Cause/Manner
58. mekat'	To baa (sheep) (coll.)	Cause/Manner
59. motat'	To waste on extravagance (coll.)	Cause/Manner
60. murlykat'	To purr (cat)	Cause/Manner
61. myčat'	To moo, bellow	Cause/Manner
62. mjamlit'	To mumble	Cause/Manner
63. mjaukat'	To meow	Cause/Manner
64. numerovat'	To number	Purpose
65. operirovat'	To operate (on)	Purpose + Path (on)
66. reagirovat'	To react to	Causativity
67. repetirovat'	To rehearse	Purpose
68. referirovat'	To make a synopsis of	Purpose
69. recenzirovat'	To review	Purpose
70. sverlit'	To drill (hole, tooth, etc.)	Purpose + Path (through)
71. svetlet'	To brighten up, become bright	Causativity
72. signalizirovat'	To signal	Purpose
73. signalit'	To signal (coll.)	Purpose
74. sklonjat'	To decline (gram.)	Purpose

75. slyt'	To be reputed to be, have a reputation for	Cause/Manner
76. sprjagat'	To conjugate (verb)	Purpose
77. stročit'	To stitch	Purpose + Path (through)
78. taranit'	To ram	Purpose + Path (on)
79. tralit'	To trawl	Cause/Manner
80. trubit'	To blow (trumpet); sound, signal, announce	Purpose + Cause/Manner
81. tjavkat'	To yelp	Cause/Manner
82. určat'	To rumble	Cause/Manner
83. fil'trovat'	To filter	Purpose + Path (away)
84. xripet'	To wheeze	Cause/Manner
85. citirovat'	To quote, cite	Purpose
86. čitat'	To read	Purpose
87. šampovat'	To stamp	Purpose + Path (on)
88. študirovat'	To study	Purpose
89. èkzamenovat'	To examine	Purpose

## APPENDIX H

### Verbs that take the prefix *s-*

Verb	Translation	Semantic Category
1. agitirovat'	To urge, try to persuade (coll.)	Purpose
2. byčit'sja	To be gloomy, sullen	Causativity
3. valit'	To knock down	Purpose + Path (down)
4. valjat'	To full	Purpose
5. varganit'	To do, make in a hurry, poorly	Cause/Manner
6. verstat'	To make into pages (printing)	Purpose
7. vešat'	To weigh	Purpose
8. vit'	To make (by twisting), build a nest	Purpose + Cause/Manner
9. glupit'	To be foolish, behave foolishly	Cause/Manner
10. gnit'	To rot, decay	Causativity
11. gnoit'	To let/leave/cause to rot	Purpose
12. gorbit'	To hunch	Cause/Manner
13. goret'	To burn, be on fire	Causativity
14. gruppirovat'	To group, classify	Cause/Manner + Purpose
15. gruppirovat'sja	To form groups – reflexive	Purpose
16. gubit'	To ruin, destroy (coll.)	Causativity
17. dvurušničat'	To act like a double-dealer	Cause/Manner
18. delat'	To do, make	Purpose
19. drejfit'	To get cold feet (coll.)	Causativity (COS-psych.)
20. dublirovat'	To duplicate	Purpose
21. žat'	To reap	Purpose
22. žeč'	To burn, burn down	Causativity
23. žul'ničat'	To cheat (coll.)	Purpose
24. kvasit'	To make sour	Purpose
25. komandovat'	To command, give orders	Purpose
26. kombinirovat'	To combine	Purpose
27. komkat'	To crumple, rush through	Causativity + Cause/Manner
28. kompilirovat'	To compile	Purpose
29. komplektovat'	To complete	Purpose
30. komponovat'	To arrange, put together	Purpose + Cause/Manner
31. komprometirovat'	To place in a compromising situation	Purpose



32. kondensirovat'	To condense	Purpose
33. konstruirovat'	To construct, design	Purpose
34. konfuzit'	To embarrass	Causativity
35. konfuzit'sja	To be embarrassed	Causativity
36. koncentrirovat'	To concentrate	Purpose
37. koncentrirovat'sja	To concentrate, mass	Causativity
38. kooperirovat'	To cooperate	Purpose
39. kooperirovat'sja	To cooperate – reflexive	Purpose
40. koordinirovat'	To coordinate	Purpose
41. kopirovat'	To copy	Purpose
42. korežit'	To warp, bend	Causativity
43. korežit'sja	To warp, bend – reflexive	Causativity
44. korobit'	To warp	Causativity
45. korobit'sja	To warp – reflexive	Causativity
46. korotat'	To while away (the time)	Cause/Manner
47. korrektirovat'	To correct	Purpose
48. korčit'	To writhe	Cause/Manner
49. kosit'	To mow, cut	Purpose
50. kosit'	To twist, contort	Cause/Manner
51. kosobočit'sja	To be in a crooked/ lopsided position	Cause/Manner
52. krivit'	To bend out of shape, twist	Purpose
53. krivit'sja	To become bent	Causativity
54. kroit'	To cut, make (a garment)	Purpose
55. kukožit'sja	To huddle/bundle up (from the cold)	Purpose + Cause/Manner
56. kuksit'sja	To sulk, mope (coll.)	Cause/Manner
57. kulemat'	To do (poorly)	Cause/Manner
58. kušat'	To eat	Purpose
59. lavrirovat'	To tack with the wind, maneuver (naut.)	Purpose
60. ladit'sja	To get on well	Cause/Manner
61. lazit'/lázat'	To crawl	Cause/Manner
62. levačit'	To use work time for personal use	Cause/Manner
63. lepit'	To make, build (nest or hive)	Purpose
64. liberal'ničat'	To be overly tolerant	Cause/Manner
65. linjat'	To fade (of clothes)	Causativity
66. lit'	To cast, form, make	Purpose
67. lovčit'	To do adroitly	Cause/Manner
68. lomat'	To break	Causativity
69. lopat'	To eat, gobble up	Cause/Manner
70. lukavit'	To pretend, use cunning	Purpose + Cause/Manner
71. lupit'	To peel off, strip off	Purpose + Path (away)

72. lupit'	To charge (high price)	Purpose
73. malodušničat'	To be fainthearted	Causativity
74. manevririvat'	To maneuver	Purpose
75. masterit'	To make, fashion, build	Purpose
76. merit'	To try on (coll.)	Purpose
77. metat'	To baste	Purpose + Path (on)
78. mešat'	To mix, blend	Purpose
79. modelirovat'	To design (clothes)	Purpose
80. molot'	To grind	Purpose + Path (on)
81. montirovat'	To assemble	Purpose
82. moč	Can, to be able	Causativity
83. mošenničat'	To engage in fraud	Cause/Manner
84. mjat'sja	To wrinkle, crease, become rumpled – reflexive	Causativity + Path (on)
85. naxal'ničat'	To be insolent (coll.)	Causativity
86. nesti	To lay eggs	Purpose
87. nestis'	To lay eggs – reflexive	Causativity
88. vrat'	To lie, tell lies (coll.)	Purpose
89. gnut'	To bend	Causativity
90. gnut'sja	To bend – reflexive	Causativity
91. grešit'	To sin	Causativity
92. drat'	To charge (large price)	Purpose
93. ozorničat'	To be naughty, make mischief	Cause/Manner
94. zret'	To ripen, mature	Causativity
95. lgat'	To lie	Purpose
96. operirovat'	To operate on	Purpose + Path (on)
97. pret'	To rot	Causativity
98. original'ničat'	To try to be clever (coll.)	Purpose + Cause/Manner
99. orientirovat'	To orient	Purpose
100. orientirovat'sja	To orient oneself	Purpose
101. starit'	To age, make old	Causativity
102. starit'sja	To age, grow old	Causativity
103. ostrit'	To make, crack jokes	Purpose
104. stroit'	To make someone out to be	Purpose
105. strjapat'	To cook up, concoct	Purpose
106. sčitat'	To count	Purpose
107. sčitat'sja	To calculate, settle accounts	Purpose
108. tvorit'	To create	Purpose
109. tvorit'sja	To be created	Causativity
110. tkat'	To weave	Purpose
111. ščurit'	To squint	Causativity
112. ščurit'sja	To squint – reflexive	Causativity
113. palit'	To singe, scorch (accidentally)	Causativity

114. pasovat'	To pass (cards)	Purpose
115. pelenat'	To diaper, swaddle	Purpose
116. peret'	To make off with	Cause/Manner
117. pet'	To sing	Cause/Manner
118. pikirovat'	To dive (aero.)	Purpose
119. planirovat'	To plan	Purpose
120. plutovat'	To cheat	Purpose
121. pljasat'	To dance	Cause/Manner
122. podličat'	To be mean, do mean things	Cause/Manner
123. pressovat'	To press	Purpose + Path (on)
124. provocirovat'	To provoke	Purpose
125. proektirovat'	To design, project	Purpose
126. proecirovat'	To carry out a project	Purpose
127. prjast'	To spin (cloth, yarn)	Purpose
128. prjatat'	To hide, conceal	Purpose + Path (away)
129. prjatat'sja	To hide – reflexive	Causativity + Path (away)
130. putat'	To mix up, confuse	Causativity
131. putat'sja	To become tangled, confused	Causativity
132. ravnjat'	To equalize, make equal	Purpose
133. reagirovat'	To react to	Causativity
134. rifmovat'	To rhyme	Purpose
135. rovnjat'	To even, level	Purpose
136. roit'sja	To swarm	Cause/Manner
137. sutulit'	To hunch	Cause/Manner
138. sutulit'sja	To stoop, slouch	Cause/Manner
139. sučit'	To spin, twist	Causativity
140. tancevat'	To dance	Cause/Manner
141. tasovat'	To shuffle (cards)	Purpose
142. tačat'	To stitch	Purpose + Path (through)
143. temnet'	To get dark	Causativity
144. torgovat'	To bargain, do business (coll.)	Purpose
145. torgovat'sja	To haggle (coll.)	Cause/Manner
146. tošnit'	To be nauseous	Causativity
147. trenožit'	To hobble (a horse)	Purpose
148. trusit'	To be a coward, afraid, get cold feet	Causativity
149. tušit'	To stew, braise	Purpose
150. umničat'	To show off one's intelligence	Cause/Manner
151. fabrikovat'	To make up, fabricate	Purpose
152. fal'sivit'	To be insincere, hypocritical	Causativity
153. fantazirovat'	To fantasize, dream up	Cause/Manner

154. fokusirovat'	To focus	Purpose
155. formirovat'	To form, mold, organize	Purpose
156. formirovat'sja	To be formed, develop	Causativity
157. formovat'	To shape, mold, model	Purpose
158. formulirovat'	To formulate, word, phrase	Purpose
159. fotografirovat'	To photograph	Purpose
160. xalturit'	To earn money on the side	Cause/Manner
161. xitrit'	To use cunning, guile	Cause/Manner
162. xoronit'	To bury	Purpose + Path (down)
163. xoronit'sja	To be buried	Causativity + Path (down)
164. capat'	To grab quickly/rudely	Cause/Manner
165. cementirovat'	To cement	Purpose + Path (on)
166. exidničat'	To say sarcastically, maliciously	Cause/Manner
167. jazvit'	To say sarcastically	Cause/Manner
168. igrat'	To play	Purpose
169. imitirovat'	To imitate	Purpose
170. improvizirovat'	To improvise	Cause/Manner
171. èkonomit'	To save	Purpose

## APPENDIX I

### Verbs that take the Prefix *u-*

Verb	Translation	Semantic Category
1. bajukat'	To lull, sing, rock to sleep	Purpose
2. venčat'	To crown	Purpose
3. vidat'	To see (coll.)	Purpose
4. vidat'sja	To be seen (coll.)	Causativity
5. videt'	To see	Purpose
6. videt'sja	To see one another	Purpose
7. vračevat'	To heal (arch.)	Purpose
8. vjaznut'	To get stuck	Causativity
9. gasnut'	To go out (fire), go off (TV), fade	Causativity
10. vjanut'	To wilt, wither, fade (of a person)	Causativity (COS-phys./psych.)
11. grobit'	To ruin, destroy	Purpose
12. davit'	To strangle, constrict	Purpose
13. davit'sja	To choke – reflexive	Causativity
14. žalit'	To sting	Causativity
15. zret'	To behold (arch.)	Purpose
16. kokat'	To terminate, finish off	Purpose
17. kolot'	To prick, stab, rebuke	Purpose
18. kompletovat'	To complete (set), bring to full strength	Purpose
19. krast'	To steal	Purpose
20. licezret'	To behold	Purpose
21. majat'sja	To toil, slave	Purpose
22. množit'	To multiply, augment	Purpose
23. množit'sja	To multiply – reflexive	Causativity
24. morit'	To wear down, torment	Purpose
25. motat'	To take off, run away (coll.)	Purpose + Path (away)
26. navozit'	To treat with manure	Purpose + Cause/Manner
27. nasledovat'	To inherit, succeed to throne	Causativity
28. pakovat'	To pack	Purpose
29. pokoit'	To surround with peace	Purpose + Cause/Manner
30. pret'	To slowly ripen with heat	Causativity + Cause/Manner
31. slyxat'	To hear (coll.)	Causativity
32. slyšat'	To hear	Causativity
33. soveršenstvovat'	To improve, perfect, refine	Purpose

34. soveršenstvovat'sja	To improve, perfect – reflexive	Causativity
35. sovestit'	To chide, shame	Purpose
36. staret'	To become obsolete, antiquated	Causativity
37. topit'sja	To drown oneself	Purpose
38. trambovat'	To beat, smooth down	Purpose + Path (on)
39. činit'	To carry out, create	Purpose
40. čudit'	To behave oddly, act up	Cause/Manner
41. topit'	To drown (animal, person)	Causativity

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