Four Ways to Get Tangled Up in Russian: A Case Study of Prefix Variation in the Verb ПУТАТЬ 'tangle'

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1. Introduction

In this paper I will analyze the four aspectual partners of the simplex verb *путать*[ipf] 'tangle', namely *впутать*[pf], *спутать*[pf], *перепутать*[pf] and *запутать*[pf]. When a simplex verb in Russian has more than one aspectual partner, this verb can be said to have "prefix variation." According to Janda et al. (2013, 103), prefix variation is a phenomenon that applies to 27% of all Russian verbs and is caused by the ability of prefixes to "focus the meanings of a simplex verb in different ways" (Janda et al. 2013, 162). My question is: *Is it possible to predict the choice of prefix when there is prefix variation?* And, if yes: *How*?

My hypothesis is that the choice of prefix largely depends on the construction in which the verb appears and the semantics of its internal argument. Thus, I consider two factors in my analysis: Factor 1 Constructions and Factor 2 Semantics of the Internal Argument. My findings indicate that both factors are vital and, more specifically, that the choice of prefix for this verb to a large extent can be predicted by six tendencies that I will discuss thoroughly.

I will argue that these six tendencies are of great relevance to second language learners who often find themselves confused at the number of prefixes and, more specifically, aspectual partners available for a given verb. The topic of this paper has been born from a desire to gain insight with practical value in second language learning.

My paper is structured as follows. In Section 2 I discuss the place of aspect and prefix variation in the Russian verb system. In Section 3 I give an overview of methodology and data. In Section 4 I describe Factor 1 and 2. In Section 5 I present a Classification Tree (cTree) of my results and discuss each tendency thoroughly. In Section 6 I discuss implications that my findings, as well as similar research, can have in second language learning of Russian. In Section 7 I summarize my findings and suggest some possible venues for further research. The cTree can be found at the end of this paper.

2. Aspect and Prefix Variation in Russian

Aspect can be described as "different ways of viewing the internal temporal constituency of a situation" (Comrie 1976, 3). Some languages, like Norwegian, do not have morphological aspect, but in Russian, aspect, i.e. imperfective or perfective, is obligatory in every verb form. Thus, aspect is a central verb category in Russian.

The idea of "aspectual pairs" has been prevalent in Russian aspectology. An aspectual pair consists of two verbs, one imperfective and one perfective, which have identical meanings and only differ in aspect. One such example is *писать*[ipf]/*написать*[pf] 'write' where the perfective is made from adding a prefix to the stem. Other aspectual pairs are formed via suffixation, such as *подписать*[ipf]/*подписывать*[pf] 'sign'.

The most famous criterion for determining aspectual pairs is called "Maslov's criterion" and makes use of a context where perfective is prohibited, namely *praesens historicum* (Kuznetsova 2012, 96, Zaliznjak and Šmelev 2000, 47, Maslov 1984, 48–65). In *praesens historicum* past events are described as if they happen in the present. By way of example, consider the two sentences in (1) and (2):

(1)   Придя вчера домой, я написал[pf] письмо.
(2)   Прихожу я вчера домой, пишу[ipf] письмо.

The first sentence describes the event by a perfective verb in the past tense, while the second one describes the same event by an imperfective verb in the *praesens historicum*. Since the verbs do not differ in meaning, we are in a position to claim that the two verbs, *писать*[ipf] and *написать*[pf], form an aspectual pair according to Maslov's criterion (Zaliznjak and Šmelev 2000, 48).

Janda (2007, 609) terms the aspectual partner of a simplex verb, e.g. *написать*[pf], a Natural Perfective, and only this type of perfective has the same lexical meaning as the stem. She further recognizes three other types of perfectives (Janda 2007):

(3)   Specialized Perfectives: The prefix adds a new meaning to the verb, e.g. *под* + *писать*[ipf] 'write' = *подписать*[pf] 'sign'. This perfective is thus related to the simplex verb, but not an aspectual partner according to Maslov's criterion.

(4)   Complex Act Perfectives: The prefix imposes temporal boundaries on atelic activities, e.g. *по* + *писать*[ipf] 'write' = *пописать*[pf] 'write for some time'. Verbs are atelic if they lack an inherent *telos*, i.e. goal or endpoint (Nesset 2013, 50). The activity of writing has no natural endpoint and is therefore atelic in nature. When, however, it is followed by a direct object, such as *письмо* 'letter', the activity becomes telic and is completed when the letter has been written.

(5)   Single Act Perfectives: The prefix *c*- or suffix -*ну*- points to one instance of a serial event, e.g. *махать* 'wave' + -*ну*- = *махнуть* 'wave once'.

In Specialized, Complex Act and Single Act Perfectives the prefixes change both aspect and meaning of the simplex stem, which it is added to. In Natural Perfectives they only change

aspect. Two hypotheses have been proposed to explain the function of prefixes in Natural Perfectives, "The Emptiness Hypothesis" and "The Overlap Hypothesis" (Janda et al. 2013:6).

According to the Emptiness Hypothesis the prefix "makes no contribution to the Natural Perfective" (Janda et al. 2013,, 6). They are "empty" of lexical meaning and only change aspect. This has been the most widespread theory in Russian aspectology, although it has been criticized for more than half a century (Kuznetsova 2012, 108, Janda et al. 2013).

The Overlap Hypothesis explains the apparent emptiness as overlap, i.e. prefixes combine systematically with verbs with which they share semantic content. The result is an illusion of emptiness; the meaning of the prefix fuses with the meaning of the verb. In the verb *написать*[pf] 'write', the meaning of *на-*, which is SURFACE (Janda et al. 2013, 100), overlaps with the meaning of *писать*[ipf] 'write' since writing requires a surface. In 2013 the CLEAR group from the University of Tromsø presented substantial empirical evidence in support of The Overlap Hypothesis (Janda et al. 2013).

If the prefixes in Natural Perfectives were empty, like the Emptiness Hypothesis insists, there would be no need to have more than one Natural Perfective for any given verb. In reality, though, 27% of Russian verbs have between two and six Natural Perfectives (Janda et al. 2013, 162), a phenomenon called "prefix variation" (Janda et al. 2013, 139). The "macroperspective" analysis of the CLEAR group covered a large number of Russian verbs and showed a consistent overlap between the meanings of verb and prefix in Natural Perfectives. They concluded that prefix variation is possible because the prefixes retain their lexical meanings in Natural Perfectives and can focus the meaning of the verb in different ways (Janda et al. 2013, 162).

The present paper offers a "microperspective" analysis of the four Natural Perfectives of *путать*[ipf] 'tangle', namely *впутать*[pf], *спутать*[pf], *перепутать*[pf] and *запутать*[pf], and seeks to shed more light on the interaction between verb and prefix when there is prefix variation. Although much has been found in support of the Overlap Hypothesis, there are still many things to learn about overlap. The analysis I propose suggests that prefix variation and semantic overlap are systematic phenomena and that each prefix fulfills a function that harmonizes with its meaning.

The verb *путать*[ipf] 'tangle' was chosen for three reasons. First, it has four Natural Perfectives and thus it is a good example of a verb with prefix variation. Second, it is a frequently used verb, which is important in a corpus based analysis. Third, it is a verb with several abstract meanings, which, in my opinion, makes it interesting from a pedagogical perspective because experience shows that they are the most challenging to learn

3. Methodology

My material was extracted from the modern subcorpus (1950–2014) of the Russian National Corpus (RNC[1]) and only one example was allowed from each document in order to exclude author as a relevant factor.

All examples were then imported into Excel and coded manually. In the case of *запутать*[pf], *перепутать*[pf] and *спутать*[pf] I examined the first 200 randomly shown

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[1] The Russian National Corpus (RNC): www.ruscorpora.ru

sentences. For *впутать*[pf] there were only 30 examples in the subcorpus (all from different documents) and these were all included. Thus, my database contained a total of 630 examples.

Each example was coded with prefix (*в-, с-, пере-, за-*), type of construction and semantic category of the internal argument. My classification of constructions and semantic categories is presented in the next section.

Finally, I made a cTree of my data in the statistical program R. This cTree revealed six clear tendencies in the choice of prefix and is found in Figure 1.

4. Factors: Constructions and Semantics of Internal Argument

4.1. Constructions

Goldberg (2011, 17) defines constructions as "conventional, learned form-function pairings at varying levels of complexity and abstraction," which means that even words and morphemes can be understood as constructions. In this analysis, however, I will only consider syntactic constructions, i.e. syntactic contexts, in which one of the four relevant verbs appears. I will use the terms "active/non-passive constructions" about constructions with an active verb form, and "passive constructions" about constructions with past passive participles.

As Kuznetsova (2012, 107) points out, most verbs are used in a variety of argument structures, i.e. constructions. In order to discover statistically robust tendencies, I identified the four most basic constructional patterns in my database:[2]

(6)   *V acc* (verb + internal argument in accusative)
       Example: — По-моему, я *перепутал стаканы*. (Vojnovič 1986)
(7)   *V acc s ins* (construction (6) + prepositional phrase *с чем* 'with something')
       Example: *Спутали* вы *меня с кем-то!* (Leonov and Makeev 2003)
(8)   *V acc v acc* (construction (6) + prepositional phrase *во что* 'into something')
       Example: Блин, зачем я *Грома впутал в это*? (Gračev 1999)
(9)   *Passive* (past passive participle)
       Example: Всё в её жизни ужасно *запутано.* (Soldatenko 2010)

I will use *internal argument* as a cover term for objects in active sentences and subjects in passive sentences. The three non-passive constructions involve a verb (V) and an internal argument in accusative. Constructions (7) and (8) involve prepositional phrases. All three constructions involve a subject, but type of subject did not appear relevant for the choice of prefix for *путать*[ipf] 'tangle' and was not considered in the analysis.

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[2] All the numbered examples in the following are culled from the Russian National Corpus (www.ruscorpora.ru). For the convenience of the reader, relevant constructions are italicized. For works of fiction, I cite the author and year of publication, while for non-fiction I give name of journal and year of publication. All data and code are archived at the Tromsø Repository of Language and Linguistics (TROLLing), and is available at http://hdl.handle.net/10037.1/10138.

Table 1 shows the distribution of prefixes among the constructions. The table reveals that each of the four prefixes is favored in a different construction. The three prefixes *в-*, *пере-* and *за-* have a frequency of 60% or more in their prototypical constructions. The frequency of *c-* in its prototypical construction is slightly lower, but still much higher than in any other construction, with 45,5%. Thus, each prefix interacts with type of construction in a unique way.

	в-		*с-*		*пере-*		*за-*	
V acc	8	26,7%	54	27%	120	60%	61	30,5%
V acc s ins	0	0%	91	45,5%	52	26%	0	0%
V acc v acc	19	63,3%	0	0%	0	0%	0	0%
Passive	3	10%	55	27,5%	28	14%	139	69,5%
Total	30	100%	200	100%	200	100%	200	100%

Table 1: Raw and relative frequency distribution of prefixes in constructions. Shaded cells represent the most frequent construction for each prefix.

4.2. Semantics of the Internal Argument

In order to discover clear tendencies in my material, I chose to consider only three semantic categories: 1) animate beings, 2) abstract things and 3) concrete objects. The particular content of each semantic category was scrutinized in the analysis of each tendency (see Section 5). I also made a category called *no object* for sentences with ellipsis, i.e. an internal argument that is understood from context. Thus, I considered only the sentences in which the relevant verbs appear. By way of example, the following sentence was regarded as having no object although the assumed object, a conveyed message, is abstract.

(10)   Короче, он смутился, он сказал, что *перепутал*, что не камнем я буду, а травинкой. (Sadur 1996)

Table 2 shows the distribution of prefixes among the semantic categories.

	в-		*с-*		*пере-*		*за-*	
animate	24	80%	41	20,5%	26	13%	40	20%
concrete	0	0%	68	34%	39	19,5%	14	7%
abstract	5	16,7%	74	37%	101	50,5%	144	72%
no object	1	3,3%	17	8,5%	34	17%	2	1%
Total	30	100%	200	100%	200	100%	200	100%

Table 2: Raw and relative frequency distribution of prefixes in semantic categories. Shaded cells represent the most frequent semantic category for each prefix.

While *в-* mostly appears with animate beings, the other three prefixes most often appear in contexts with abstract things. What Table 2 does not show, however, is whether the prefixes are used about the same type of animate/concrete/abstract objects or they have their own "domains" within these semantic categories. Furthermore, neither Table 1 nor Table 2 shows how the two factors interact with one another. This is what the cTree is designed to do. In the remaining part of the paper I will present my cTree and discuss my findings. By using examples from the database I hope to demonstrate how each prefix focuses the meaning of the verb in unique ways and thus, by and large, can be predicted.

5. Classification Tree Analysis

The goal of a Classification Tree (cTree) is to provide optimal sorting of data according to the relevant factors. Its ability to work with few factor levels and show how these interact (Baayen et al. 2013, 267, 264) makes it ideal for the present analysis, which involves 630 examples and two factors. My cTree is presented in Figure 1 at the end of the article.

A cTree resembles a tree upside-down. The root is on the top while the leaves are on the bottom. To make sense of the model, we begin at the top with Node 1, the "root node," which contains all the examples in my database. The node itself is labeled *Construction*, which explains that the examples in Node 1 can be divided in two groups based on type of construction. Often, but not necessarily, the first split is provided by the most important factor (Baayen et al. 2013, 265). In my analysis, *Construction* provides the first three splits in the tree, which indicates that this factor is at least very, if not most, important. According to Node 2 at the bottom, 19 examples belong to the *V acc v acc* construction and all of them involve the prefix *в-*. This strongly indicates that *впутать*[pf] can be learned as a construction: *впутать что/кого во что.* The remaining 611 examples are sent further to Node 3, where the cTree once again predicts that the sentences can be classified in two groups based on construction, *passive* and *non-passive*. This classification process continues until the cTree has made all the "splits" it can, based on the two given factors. At the bottom of the tree, there are six histograms that each displays a tendency in the choice of prefix. I will now discuss each main tendency and also seek to explain exceptions from the main pattern. The first two tendencies are based solely on type of construction, while the remaining four also take the semantic factor into account.

5.1. Active Constructions

The strongest tendency in my material is found with the *V acc v acc* construction which, regardless of the semantic features of the internal argument, prefers only one prefix; *в-*.

(11)   Tendency 1 (Node 2 = 19 examples):
       The V acc v acc construction favors в-.

An example of this prototypical usage is offered in (12):

(12)   Но ведь этим самым *я впутаю Тетерина в весьма неприятную историю.*
       (Tendrjakov 1960)

The strong preference for *в-* seems logical. According to Janda et al. (2013, 41) the prefix *в-* displays only one meaning, namely 'in(to)', and we often see the prefix combined with the preposition *в* 'in(to)' when used with other verbs: *войти в комнату* 'walk into a room', *впрыгнуть в машину* 'jump into a car'. The examples in my database do not provide an opportunity to explore instances of other prefixes in this construction, although specific searches in the RNC reveal that they occur. There is one example of this in (13):

(13)   Параллельно с домом стояли другие похожие на него строения. Можно было
       их спутать в малоудачный день. (Zajčik 2002)

The second construction allows for two prefixes, namely *c-* and *пере-*. The cTree shows that *c-* is prototypical in the construction, while *пере-* is common, but not quite as frequent:

(14)   Tendency 2 (Node 5 = 143 examples):
       The V acc s ins construction favors C-.

Can the choice between *c-* and *пере-* be predicted? Table 3 indicates that both prefixes are possible and frequent in all the relevant semantic categories and the examples in my database do not reveal any clear domains for either prefix. The prefix *c-* is, however, more common. It is probable, but beyond the scope of this paper to examine, that a larger number of examples from the corpus and/or more factors would make it possible to identify some clearer tendencies for the choice between *c-* and *пере-* in the *V acc s ins* construction.

	c-		*пере-*	
animate	39	42,8%	24	46,1%
concrete	19	20,9%	9	17,3%
abstract	26	28,6%	19	36,6%
no object[3]	7	7,7%	0	0%
Total	91	100%	52	100%

Table 3: Raw and relative frequency distribution of prefixes in semantic categories in the *V acc s ins* construction. Shaded cells represent the most frequent semantic category for each prefix

The *V acc s ins* construction is used in contexts where one thing, or person, is confused with another. Both *c-* and *пере-* have meanings that overlap with this idea while *за-* and *в-* do not. Thus we see a systematic overlap between meaning in verb and prefix. The prefix *c-* is associated with the meaning TOGETHER (Janda et al. 2013, 97), which involves a closeness between two or more things. The prefix *пере-* has the meaning MIX (Janda et al. 2013, 67) which involves the idea of two or more things changing place. The unfortunate case in (15) illustrates how two things can be confused with one another if they are not distinct enough, i.e. far enough apart.

(15)   А врач *спутал гонорею с уретритом.* (*Avtopilot* 2002)

Node 7 involves both concrete and abstract internal arguments, and three prefixes appear relevant, *пере- c-* and *за-*:

(16)   Tendency 3 (Node 7 = 201 examples):
       Abstract and concrete internal arguments in the V acc construction favor ПЕРЕ-, C- or ЗА-.

Is the choice of prefix arbitrary or can it be predicted? I propose that the choice of prefix can be predicted with a fair level of confidence based on semantic criteria. According to

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[3] In the *V acc s ins* construction, "no object" refers to sentences where the internal argument in accusative is understood from context (ellipsis), e.g. — Может, *спутал с «Диалектикой природы» Энгельса,* — небрежно ответил я, — но это маловероятно. (Iskander 1998)

Table 4, abstract objects are more common with all three prefixes and their relative frequencies for concrete objects are quite similar. An analysis of the 199 relevant sentences, however, indicates that the three prefixes have their own domains within each semantic category. I will now discuss these domains. I will begin with the most frequent prefix, *пере-*, and then move on to *с-* and *за-*.

	с-		*пере-*		*за-*	
concrete	6	11,3%	18	15,3%	3	10,8%
abstract	37	69,8%	66	55,9%	23	82,1%
no object	10	18,9%	34	28,8%	2	7,1%
Total	53	100%	118	100%	28	100%

Table 4: Raw and relative frequency distribution of prefixes in semantic categories in the *V acc* construction (Node 7). Shaded cells represent the most frequent semantic category for each prefix

The prefix *пере-* is particularly frequent in two contexts, both of which are connected with the meaning MIX. In the first context, two or more things have been mixed up, i.e. mistaken for each other. These things may be concrete or abstract, as examples (5) and (6) illustrate:

(17)   В темноте Каштанов *перепутал корпус*. Номер дома он разглядел, но не знал, что под одной цифрой числилось несколько корпусов: «А», «Б», «В» и «Г». (Rjazanov 1998)

(18)   — Я просто *день перепутал*. Я думал, сегодня воскресенье. (Bolmat 1999)

The second context for *пере-* is found only with abstract internal arguments and I will call this context "lack of order." In this context, the focus is not on one thing being mistaken for another, but on one thing forcing something out of its normal order. Very often (48,9%) the internal argument in these sentences is *что/что-то/что-нибудь* 'something', *ничего* 'nothing' and *всё* 'everything'. By way of example, consider the example in (19):

(19)   *Особенная атмосфера бесконечных споров, влюбленности, смеха все перепутала* в нашем и без того беспорядочном доме. (Kaverin 1974–1976)

The prefix *с-* is also used in two contexts. In the first context, of which there are only a few examples in my database, something is mistaken for something else (like in the *V acc s ins* construction, and also like *пере-*, page 8). An example of this is given in (20).

(20)   Вроде свойский парень, и все равно... Хочешь анекдот про него? *Спутал* по рассеянности *квартиру*, поднялся на другой этаж. (Solncev 2002)

In the second context, something is tangled together. Thus, the choice of prefix is clearly motivated by the TOGETHER meaning of *с-*. The only concrete object found in this context in my database is *ноги* 'feet'. The fixed expression *спутать*^pf *ноги кому* 'bind someone's feet' is frequently used about hobbling horses, but it can also be used about human feet, as in (21).

(21)   Эти веревочки и *спутали мне* намертво *ноги*, когда я перевернулся. (Kuvaev 1970)

Abstract objects cannot be tangled together physically and can be understood as tangled only via domain mapping, i.e. metaphor. A metaphor, as it is understood today, can be defined as "a cross-domain mapping in the conceptual system" (Lakoff 1993, 203) and often involves conceptualizing the non-physical, i.e. abstract, in terms of the physical (Lakoff and Johnson 1980, 59). In my material, all of the abstract objects with *c-* pertain to our "inner reality," i.e. our mind, and I will refer to them as "internal matters." Some examples are *планы* 'plans', *мысли* 'thoughts', *впечатление* 'impression' and *расчёты* 'estimation'. Here then, an abstract, mental "tangle," i.e. confusion, is understood in terms of a physical tangle. I call this metaphor CONFUSION IS A TANGLE.

(22) Творцы политики США оскорбляли Советский Союз, так как было ясно, что советские предложения эффективно *спутали планы западной «дипломатии» окружения.* (*Nauka i žizn'* 1950)

The same metaphor motivates the use of *c-* in the fixed phrase *спутать карты кому* 'to spoil someone's game/plans'.

(23) Однако *все карты ему спутал Митчелл*, который, нарочито не замечая неудачи, не стал покидать вице-президентское кресло. (*Izvestija* 2001)

The prefix *за-* is also found in two contexts and in both the choice of prefix appears motivated by the COVER meaning of *за-* (Janda et al. 2013, 103). The first context involves concrete objects and is very rare in my database. I have a total of three examples. In this context, something is tangled around something else, thus covering the object. By way of example, the kids in (24) find their faces all covered in spiderweb as they play around in the forest:

(24) Знакомая брату тропинка поднималась по обрыву, уводила в бор, взбираться было нелегко, но очень весело... *Лицо* уже *запутала* паутина, и мы взбирались, цепляясь за можжевельник. (Zurov 1956–1969/2005)

The second context with *за-* is much more frequent and involves abstract objects. Again, abstract objects cannot be covered physically and this calls for a metaphorical interpretation. All the abstract objects with *за-* pertain to our "outer reality," e.g. *ситуация* 'situation', *проблемы* 'problems', *дело* 'affair', etc. I will refer to them as "external matters." Thus, it seems that *c-* and *за-* are used in complementary distribution in this construction. The prefix *c-* is used about internal matters, while the prefix *за-* is used about external matters. The source domain of the metaphor for external matters involves something that covers physically, while the target domain involves something that causes lack of clarity on an abstract level. I propose the metaphor CONFUSION IS LACK OF SIGHT. By way of example, consider (25) where measures are taken in order to confuse an enemy:

(25) Там в них вносились необходимые изменения, чтобы максимально *запутать управление войсками противника*, после чего радисты передавали их адресатам... (*Soldat udači* 2004)

The COVER meaning of *за-* also motivates the choice of prefix in the fixed phrase *запутать следы* 'cover one's tracks'.

> (26)   Поэтому нельзя, наверно, чтобы писатель-рассказчик отвлекался от своего житейского опыта в сторону чисто профессиональную. В стороне чисто профессиональной легче *запутать следы*, скрыть, что тебе, собственно, нечего рассказать. (Šukšin 1964)

Node 8 shows a clear tendency to use *за-* when the internal argument of the *V acc* construction is an animate being:

> (27)   Tendency 4 (Node 8 = 42 examples)
> Animate internal arguments in the V acc construction favor ЗА-.

Why is *за-* preferred? And in which contexts are the other prefixes used? I propose that the choice of prefix is motivated by an understanding of confusion as a lack of clarity. Again, this corresponds with the COVER meaning of *за-*. If CONFUSION IS LACK OF SIGHT, confusion arises because something hinders us from seeing, or distorts our view. In the following example, politics is responsible for making someone confused. In accordance with my discussion of Tendency 3 (Node 7) above, the choice of *за-* appears logical. People get confused not from being tangled together, but from a lack of clarity.

> (28)   Но мы *люди* искусства, и политическая игра постепенно *запутала многих из нас.* (Smexov 2001)

In my material *c-* and *nepe-* appear only rarely when the internal argument is animate, but they are possible. Due to their meanings TOGETHER and MIX they are used in contexts where one person is mistaken for another. Thus, the *V acc s ins* construction is clearly favored (Node 5) to convey that someone has been mistaken for someone else.

> (29)   И тут не в первый раз (но впервые в подобной ситуации) в уме ее возник образ Бориса. Он, кстати, хоть и старше вдвое этого парня, но строен, тренирован и немногим ему уступит. В темноте *их* можно даже *спутать.* (Belkina 2002)

The few occurrences of *в-* in Nodes 7 and 8 seem to involve ellipsis of the prepositional phrase *во что* 'in(to) something', e.g. (17). After all, it is hard to imagine getting tangled into something that is not. It goes beyond the scope of this paper to examine the greater context of these sentences to see if they too are examples of the *V acc v acc* construction.

> (30)   — Неужели вы сами не понимаете, что натворили?! Это же нехорошо, нечестно. Против воли! Вы *впутали совершенно постороннего человека...* (Elizarov 2007)

Node 10 displays a very strong tendency to choose *за-* when the internal argument of the passive construction is abstract or animate. The other three prefixes are used at a minimal level.

(31) Tendency 5 (Node 10 = 159 examples):
Abstract or animate internal arguments in passive constructions favor ЗА-.

In my discussion of the *V acc* construction above (Tendency 3, Node 7), I pointed out that *за-* and *с-* appear to be used in complementary distribution when the internal argument of an active construction is abstract. Based on this observation, two questions must be asked. One, is the same pattern repeated in passive constructions? And second, why is *с-* so infrequent?

In answer to the first question, it appears that this pattern is also observed in passive constructions. The vast majority of the internal arguments with *за-* in Node 10 refer to external matters and *за-* is used consistently. Frequent internal arguments include *обстоятельства* 'circumstances', *отношения* 'relations' and *жизнь* 'life'. This immediately answers the second question, as well. The prefix *с-* is infrequent because most of the abstract internal arguments are external matters and belong to the domain of *за-.* In (32) the internal argument is the ruling system in Chechnya, an external matter.

(32) Существующая *система управления* в Чечне довольно *запутанная.* (*Izvestija* 2001)

The only example in my database of an internal matter with the prefix *с-* is the fixed expression *спутанное сознание* 'mental confusion'.[4] The choice of prefix is motivated by the metaphor CONFUSION IS A TANGLE.

(33) Судорожный синдром отмечался у 10,5% больных, нарушения сознания — у 36,85%, *спутанное сознание* продолжительностью от 1 до 8 сут — у 3,5%, полная утрата сознания — у 0,2%. (*Voprosy virusologii* 2001)

A few examples with *с-* involve abstract tangles, which are not mental. By way of example, consider the sentence in (20) where the speaker recalls the sensation of growing taller as a child, further and further away "от зелёной, густой, спутанной жизни растений." While human *жизнь* 'life' is often *запутана,* the life of plants, with their many interwoven branches and leaves, may truthfully be described as *спутана.*

(34) Я подымалась все выше и выше над землей, навсегда покидая травы, однажды летом вдруг переросла куст смородины и ощутила жуть собственного роста, уносящего меня прочь от зеленой, густой, *спутанной жизни* растений. (Poljanskaja 1996)

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[4] *Mental confusion* is the corresponding medical term in English. The literal translation is *confused conscience.*

The few examples with *pepe-* are consistent with the MIX meaning of the prefix. In (35) two abstract things, letters, have deliberately been put in the wrong order, while in (36) the speaker uses a PART FOR WHOLE metonymy to convey that she feels tossed around emotionally. Metonymy is traditionally defined as a "cognitive process in which one conceptual entity, the vehicle, provides mental access to another cognitive entity, the target, within the same domain" (Peirsman and Geeraerts 2006, 270). Although nerves are physical and feelings are abstract, they are inseparable parts of our human being and thus close at our conceptual level too. Consequently, the *нервы* 'nerves' in (36) are automatically understood as a reference to strong feelings, and not to a physical disorder in the neural system.

(35)   Здесь написаны названия животных. Только *буквы* в словах *перепутаны.* Поставь их на место и ответь на вопросы. (*Murzilka* 2000)

(36)   Хочется думать жалобную мысль, что другая бы дочь не бросила мать в состоянии криза, но как ни *перепутаны мои нервы*, они не сделали из меня полную дуру. (Ščerbakova 2000)

Node 11 on the cTree indicates a strong preference for *c-* when the internal argument is a concrete object, but *pepe-* and *за-* are also possible.

(37)   Tendency 6 (Node 11 = 66 examples):
Concrete internal arguments in passive constructions favor C-

Why is *c-* so frequent? And can the choice between *c-*, *pepe-* and *за-* be predicted? The answer to the first question lies in the TOGETHER meaning of *c-*. All of the internal arguments in my database involve long, thin things that can easily get tangled up and this idea of entanglement clearly fits well with the idea of TOGETHER. One such thing is hair, and *спутанные волосы* 'tangled hair' is responsible for 22 of the 55 examples with *c-* in Node 11.

(38)   Тела их расписаны красными и белыми красками, ожерелья сделаны из зубов убитых животных, в длинные *спутанные волосы* вплетены перья райских птиц. (Morozov 1985–2001/2002)

Other examples in my database involve more specific forms of hair, e.g. *борода* 'beard', *ресницы* 'eyelashes' and the metonymy *кудрявая голова* 'curly head. The remaining examples refer to long, thin things that are used for binding items together, e.g. *верёвки* 'strings', *нить* 'thread', *ремни* 'straps, belts' and *упряжь* 'harness (for horses)'.

In answer to the second question, it appears that both *pepe-* and *за-* have clear domains, which can help to predict the choice of prefix with a fair level of confidence.

The prefix *pepe-* once again appears in two contexts, both of which are connected with the meaning MIX. In the first context something has been mixed up, i.e. mistaken for something else. This is the case with the goods in (39).

(39) «... с ним нельзя иметь дело: нарушение сроков доставки, *перепутанные* или вообще недоставленные *товары*, полное неуважение к покупателям в части обратной связи... (*Èkspert-Internet* 2001)

The second context involves lack of order. To the untrained eye, a network of train rails can seem chaotic and this motivates the choice of *пере-* in (40):

(40) Прогромыхал тяжелый товарняк. Заметались, точно отскакивая в разные стороны, *перепутанные рельсы*. (Markova 1990–2000)

The prefix *за-* is used in two contexts as well. The first context involves roads and hallways that form an intricate network of connections. These places involve lack of sight, since only parts of the network can be seen. I propose that this motivates the choice of *за-*.

(41) Навигатор провёл нас по *запутанным римским кварталам* и без приключений доставил по адресу. (*Nauka i žizn'* 2008]

The second context that is relevant for *за-* is the use of concrete internal arguments in an abstract way, like *клубок* 'tangle', in (42). I propose that the CONFUSION IS LACK OF SIGHT metaphor is relevant for these examples and that this motivates the choice of *за-*. By way of example, compare the two sentences in (42) and (43). The tangle in (42) is abstract. It is a confusing puzzle (an unsolved crime) where some of the pieces are still missing. The tangle in (43) is a physical tangle of worms. The focus on entanglement calls for the prefix *c-*.

(42) — Так, — сказал не спавший четвертые сутки Епифанов, — *запутанный клубок* получается... (Mišin 1978)

(43) Нет конца и не найдешь начала. *Спутанный клубок* упругой, живой, кровящей нити. Клубок червей... (Ščerbakova 1996)

The remaining two examples with *за-*, involving *волосы* 'hair' and *заросли* 'thicket', seem less typical for this prefix. According to my analysis and discussion above, *c-* should be predicted. Thus, as a concluding remark in this section, I must emphasize that the six generalizations discussed above are tendencies, not rules.

6. Pedagogical implications

The six generalizations discussed in the previous section are clearly relevant for second language learners and their teachers. But how can these findings be used in such a way that the second language learners not only become aware of the tendencies, but get their "own" understanding of the prefixes and how to choose between them? One way of achieving this goal is probably to let the second language learners discover the patterns for themselves, and in the following, I will propose two concrete ways to do this. In my discussion, I will use *students* as a cover term for second language learners at all educational levels.

6.1. Method I

Here, the teacher uses the present analysis, or other analyses like it, to single out questions, which the students must study on their own by considering authentic examples from the corpus. These examples are handpicked in advance by the teacher and can be simplified in order to match the level of the students, if needed. I propose that the teacher should concentrate on those "problems" which the students will be likely to encounter frequently when speaking Russian. By way of example, consider the following question: *What is the difference in meaning between* запутать человека *and* спутать человека? The question is concrete and is not necessarily answered by a dictionary. Berkov (2007), for example, suggests *forvirre* 'confuse' as a relevant translation for both verbs. Furthermore, the teacher knows that the students <u>will</u> find a pattern in the corpus examples they examine since *запутать человека* and *спутать человека* generally point to different situations, a discovery which can guide the students in the choice of prefix in many real-life situations.

6.2. Method II

The students can be engaged at an even greater level by using the corpus themselves. In their forthcoming article, Nesset and Janda (forth., 5) argue that corpus-linguistic methods can be used as part of assignments at all educational levels and that even small-scale experiments can give meaningful results. The question above can be suited for such a project. In addition to being concrete and important for the students, the question limits the type of examples that needs to be considered to sentences with animate internal objects. This makes the assignment more manageable and less time-consuming.

A quick search in the RNC for indicative forms of *запутать + animate being* and *спутать + animate being* yield at present 25 and 21 examples respectively, all from different documents. They reveal the following, expected pattern. The examples with *с-* involve a situation when someone has been mistaken for someone else and frequently contain the prepositional phrase *с кем* 'with someone'. The prefix *за-* is on the other hand used about confusing someone mentally.

To take the students one step further, the teacher can now ask *why* the two prefixes are used for these two different semantic functions. By reflecting on this, the students can gain insight not only about how to predict prefixes for *путать*[ipf] 'tangle' but also for other verbs with prefix variation.

In their discussion of how three corpus-linguistic methods can be integrated into the classroom, Nesset and Janda (forth.) suggest how students and teachers, as well as authors of teaching materials, can use the tools of corpus linguistics for their benefit. I propose that using the simple corpus-linguistic method, which I have demonstrated in this article, can be valuable for the same categories of people. In the case of prefix variation, the students can discover the prototypical contexts for a Natural Perfective by considering examples that are, as opposed to sentences in search engines such as Google, guaranteed to be correct Russian. Teachers and textbook authors can gain the same insight and this insight can help them to explain the differences between Natural Perfectives and choose prototypical examples of verbs in their teaching or books (Nesset and Janda forth.).

7. Conclusions

In the beginning of this article I set out to answer the questions of whether it is possible to predict the choice of prefix when there is prefix variation and if yes, how. I pointed out that prefix variation poses a challenge for second language learners of Russian and that answers to these questions can make language learning easier.

In order to shed light on this problem I carried out a corpus based case study of the four Natural Perfectives of one simplex verb, *путать*[ipf] 'tangle'. My database contained 630 randomly selected examples from the RNC, which were manually coded for the type of construction and the semantic category of the internal argument. My hypothesis was that choice of prefix can be largely predicted by these two factors.

The results of my analysis were displayed in a cTree and can be summarized in the six following generalizations:

1. The *V acc v acc* construction favors the prefix *в-*;
2. The *V acc s ins* construction favors the prefix *с-*;
3. Abstract or concrete internal arguments in non-passive constructions favor *пере-*, *с-* or *за-* depending on the semantic context;
4. Animate internal arguments in non-passive constructions favor *за-*;
5. Abstract or animate internal arguments in passive constructions favor *за-*;
6. Concrete internal arguments in passive constructions favor *с-*.

This list answers my questions. 1) The choice of prefix can, to a large extent, be predicted when there is prefix variation; 2) The choice of prefix can largely be predicted by type of construction and the semantic category of the internal argument. Furthermore, my results give support to the Overlap Hypothesis by showing that prefix variation is a systematic phenomenon and that the prefixes do focus the meaning of the verb in different ways (Janda et al. 2013, 162). From the perspective of second language learning, my results indicate that it can be helpful to learn the four Natural Perfectives of *путать*[ipf] 'tangle' as part of a construction and/or with a prototypical internal argument (the list above). Furthermore, similar corpora based studies of other verbs with prefix variation may help a) authors of textbooks to present Natural Perfectives in their most prototypical contexts and thus help second language learners to keep them apart, b) teachers to explain in which context a given Natural Perfective should be chosen, and c) second language learners to predict the choice of prefix themselves.

What this analysis does not answer, however, is whether the same factors are decisive with other verbs and how the overlapping looks with other verbs. This is a question that represents an interesting opportunity for future research.

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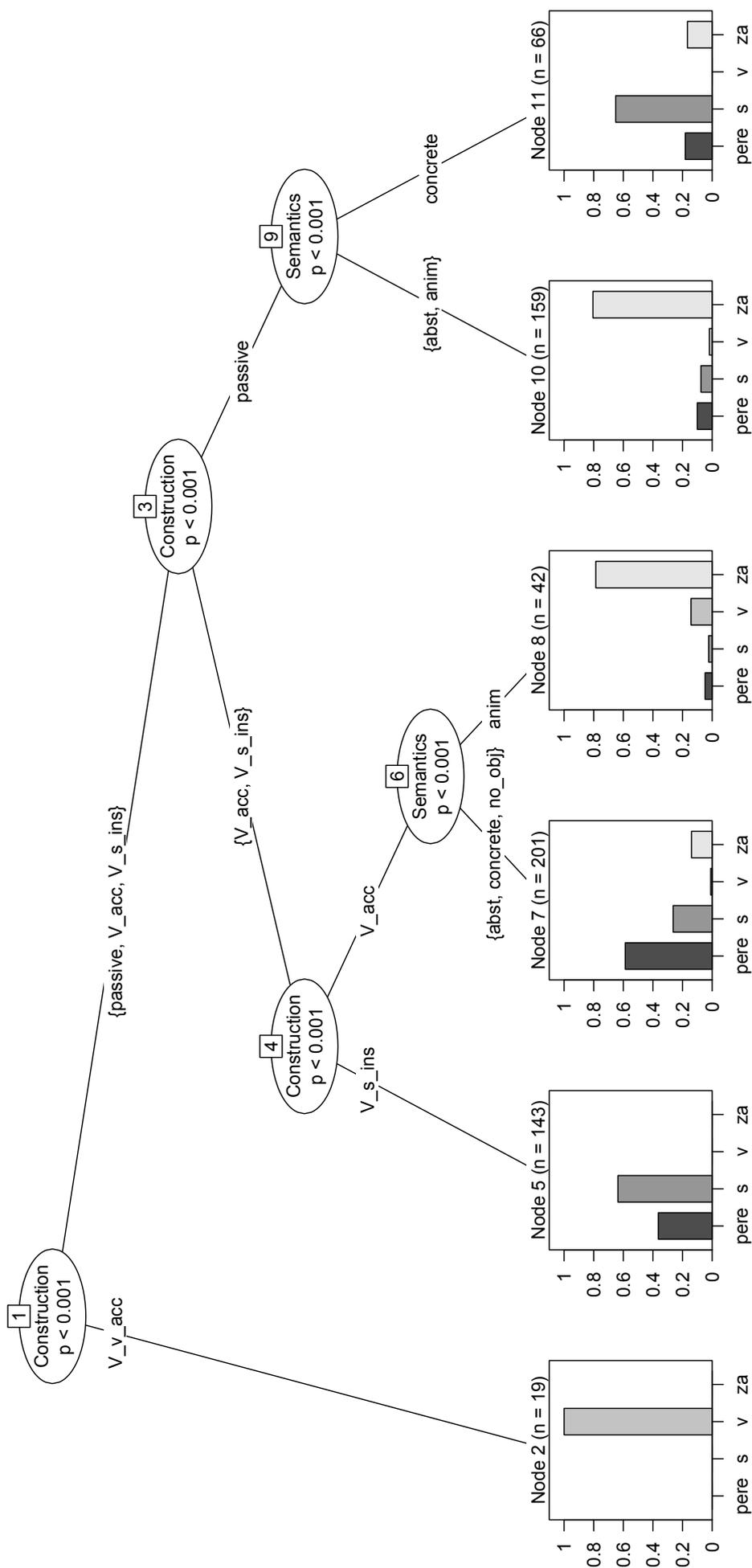affiliation: *UiT - The Arctic University of Norway*
email: *nordrum.maria@gmail.com*

Figure 1: cTree for the examples with *впутать*ᵖᶠ, *спутать*ᵖᶠ, *перепутать*ᵖᶠ and *запутать*ᵖᶠ