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Article title: "*Хохотнул, схитрил*: The relationship between semelfactives formed with *-nu-* and *s-* in Russian"
"*Хохотнул, схитрил*: Отношение между однократными глаголами образованными при помощи формантов *-ну-* и *с-* в русском языке"
Running head: *-Nu-* and *s-* semelfactives in Russian

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Мы пока знаем довольно мало про отношение между глаголами с суффиксом -*ну*-, такими как *крикнуть*, и глаголами с префиксом *с*-, такими как *сглупить* и *сходить*. В своей модели видовых гнезд Janda (2007) выдвигает утверждение об одной группе таких перфективов -- "однократных перфективах". Чтобы оценить это утверждение, мы собрали базу данных, которая включает оба типа однократных перфективов, и провели статистический анализ. На базе этого анализа, мы доказываем, что распределение морфем -*ну*- и *с*- сильно зависит от морфологического класса данного глагола. К тому же мы проследили историческое развитие значения однократности у префикса *с*- и наша работа подазывает, что оно хорошо согласуется с развитием у префиксов в русском языке значений способа действия в шестнадцатом и семнадцатом веках. Настоящая статья содержит новые данные относительно однократных перфективов в русском языке и результаты анализа этих данных. В статье ставятся вопросы об историческом развитии вида в русском языке и об алломорфии вообще.

0. Introduction

Janda 2007 presents the "cluster" model of Russian aspect. An essential claim of the cluster model is that the so-called Single Act Perfectives (semelfactives) are formed both via suffixation in -*nu*- (as in *чихнуть* 'sneeze once') and via prefixation in *s*- (primarily for motion verbs, as in *сходить* 'go someplace and come back once'). This claim can be stated as a hypothesis that -*nu*- and *s*- behave as allomorphs in the formation of semelfactive verbs. The connection between the use of the -*nu*- suffix and the *s*- prefix to form verbs meaning 'do something once' has not yet been properly explored or substantiated. The purpose of this article is to justify this connection in terms of semantic relations, morphological constraints, and historical development.

This article presents the cluster model and the allomorphy hypothesis which it entails in section 1, followed by a summary of relevant previous scholarship on -*nu*-

and *s*- semelfactives in section 2. Section 3 tests the allomorphy hypothesis against empirical data. Arguments concerning the diachronic development of -*nu*- and *s*- semelfactives as an actional (Aktionsart) type against the overall background of the evolution of Russian aspect are presented in section 4. In the conclusions offered in section 5 we summarize our findings and suggest that it might be appropriate to reevaluate linguistic concepts such as allomorphy to allow for a gradient interpretation.

1. The cluster model and the relationship between -*nu*- and *s*-

The cluster model of Russian aspect (Janda 2007, Janda & Korba 2008) connects semelfactive verbs suffixed in -*nu*- with semelfactives prefixed in *s*- by claiming that both represent Single Act Perfectives. In essence this amounts to a claim that the two morphemes are allomorphs. In order to appreciate the context for this claim and its implications, we provide a brief introduction to the cluster model.

The cluster model is offered as an extension of the traditional pair model of Russian aspect. According to the pair model, Russian verbs are normally paired for aspect, which means that they have Perfective and Imperfective partners, such as *сварить* and *варить*, both of which mean ‘cook’. The cluster model acknowledges the existence of such pairs and additionally recognizes that most pairs are embedded in more complex clusters of verbs that are aspectually related to each other while sharing a lexical core. Crucially, the cluster model distinguishes four different kinds of Perfective verbs:

Natural Perfectives are Perfectives that have the same lexical meaning as their Imperfective correlates, and this relationship is the same as that referred to in the pair model. Natural Perfectives include examples such as *сварить* ‘cook’, *написать* ‘write’, *построить* ‘build’, as well as *дать* ‘give’, which share the lexical meaning of the Imperfectives *варить* ‘cook’, *писать* ‘write’, *строить* ‘build’, *давать* ‘give’. Natural Perfectives usually describe the result one expects given a Completable interpretation of the Imperfective as a goal-directed activity. Thus although cooking, writing and building can be understood as open-ended activities (for example, in the job descriptions of a cook, a writer, and a builder), in the context of a given task (cooking a stew, writing a novel, building a house), they are construed as goal-directed situations and lead to the result expressed by the Natural Perfectives. Some Natural Perfectives express an achievement, such as *дать* ‘give’ or *увидеть*

'see'. Note that many Imperfectives, such as *скрипеть* 'squeak', lack a Completable construal and therefore have no Natural Perfective.

Specialized Perfectives are similar to Natural Perfectives in that they express the results of Completable situations, but they differ in that Specialized Perfectives entail a shift in the meaning of the verb, as we see in examples like *разварить* 'cook until soft', *подписать* 'sign', *перестроить* 'rebuild'. As a rule Specialized Perfectives have secondary Imperfectives, such as *разваривать* 'cook until soft', *подписывать* 'sign' and *перестраивать* 'rebuild'.[1]

Complex Act Perfectives are formed from verbs that allow Non-Completable interpretations. These Perfectives do not express any completion or culmination but instead impose some external boundary on an activity, usually meaning to begin doing something or do something for a certain amount of time. Examples include *поварить* 'cook for a while', *проплакать* 'cry for a certain period', *заскрипеть* 'begin squeaking'. Complex Act Perfectives do not derive secondary Imperfectives.

Single Act Perfectives likewise involve Non-Completability and in addition Granularity, selecting a single cycle in a repeatable series of actions. Examples are *скрипнуть* 'squeak once' and *чихнуть* 'sneeze once'. Like the Complex Act Perfectives, Single Act Perfectives do not derive secondary Imperfectives.

In the pair model, motion verbs are seen as exceptional in the Russian aspectual system, whereas the verbs of motion are easily accomodated in the cluster model, and are even argued to serve as prototypes for the entire system. We argue (cf. Janda 2008b, forthcoming a & b) that motion verbs are the key to the Russian aspectual system because they form all four types of Perfectives and, more importantly, they provide the concrete source domain experience for the metaphorical understanding of progress, result, process, and repetition -- concepts that are essential for aspect. Motion verbs overtly mark the distinction between Completable and Non-Completable, which is central to the differentiation of situation types and Perfectives. The Determined stems (*идти* 'walk', *лететь* 'fly', etc.) express Completable situations, whereas the Non-Determined stems (*ходить* 'walk', *летать* 'fly') express Non-Completable situations. Metaphorically, Completability for non-motion verbs is understood as "going somewhere" (and thus goal-oriented) as opposed to Non-Completability which is not about "going somewhere" (and thus does not entail progress toward a result).[2] In other words, *писать роман* 'write a novel' is a metaphorical correlate of *идти в магазин* 'walk to the store', where the writing of

each page is like a step in the direction of the store. Likewise *скрипеть* 'squeak' is a metaphorical correlate of *ходить по парку* 'walk around in the park', where the activity is not goal-directed. This correlation is confirmed by the distribution of Perfectives according to Determined vs. Non-Determined stems: Completable Perfectives such as the Natural Perfective *пойти* 'leave on foot' and the Specialized Perfective *сойти* 'descend' are formed from the Determined stem, whereas Non-Completable Perfectives such as the Complex Act Perfective *походить* 'walk for a while' and the Single Act Perfective *сходить* 'walk someplace and back once' are formed only from the Non-Determined stem. The concept of repeatable identical cycles is also motivated from the physical experience of Non-Determined motion in contexts which describe multiple round-trips such as *дети ходят в школу* 'the children walk to school'. Repeated identical cycles facilitate Granularity, which selects a single item in a series as we see in the Single Act Perfective *сходить* 'walk someplace and back once'. Semelfactives from non-motion verbs such as *чихнуть* 'sneeze once' are the metaphorical correlates of this type, where a single sneeze is like a single round-trip to school.

One peculiarity of the cluster model involves the morphological marking of the Single Act Perfectives. Why is it that the motion verbs form their Single Act Perfectives with the prefix *s*-, whereas non-motion verbs form their Single Act Perfectives with the sufix -*nu*-? This strange combination of morphemes and verb classes might inspire one to wonder whether there is any justification for putting them in a single category at all. Do the *s*- prefixed motion verbs really represent Single Act Perfectives in the same way that the semelfactive -*nu*- suffixed verbs do? The present article aims to address these questions by posing and testing the following hypothesis:

> *Allomorphy Hypothesis:* The suffix -*nu*- and the prefix *s*- behave as allomorphs in the formation of Single Act Perfectives.

The remainder of our article presents the following kinds of evidence in favor of this hypothesis:

- Existing analyses in the scholarly literature
- Empirical analysis of -*nu*- suffixed and and *s*- prefixed semelfactive verbs
- Diachronic analysis of the evolution of semelfactive verbs in *s*-

A key fact that has not been previously researched in relation to the cluster model is the existence of *s*- prefixed semelfactives that are formed from non-motion verbs, such as *схитрить* 'do one clever thing'. These semelfactives give us an opportunity to examine the relationship between -*nu*- and *s*- in a wider context.

2. Semelfactive markers -*nu*- and *s*- in the scholarly literature

This section traces previous scholarship on the synchronic relationship between -*nu*- suffixed and *s*- prefixed semelfactives (section 4 presents a discussion of diachronic facts). Since the literature on Russian aspect is vast, it is not possible to discuss all relevant works. Our goal here is merely to represent a sample of the more prominent and pertinent observations available in the literature.

Isačenko (1960) presents one of the most detailed and authoritative analyses of Russian aspectual meanings and their morphological markers. Isačenko uses the same term, *однократный* 'semelfactive', to describe both -*nu*- suffixed and *s*- prefixed Perfectives, though he places their descriptions in four separate (but contiguous) sections: one section for semelfactive -*nu*-, a second section for the extended version -*anu*-, one section for *s*- semelfactives from non-motion verbs and one for *s*- semelfactives from motion verbs (Isačenko 1960: 251-273). Isačenko does not make any direct statement as to whether these types represent a single group, but he does seem to suggest this. Isačenko joins the two in a segue between the sections on semelfactive -*nu*- and *s*-, where he suggests that whereas -*nu*- semelfactives are formed from verbs denoting concrete, visible actions (like *толкать* 'shove'/*толкнуть* 'shove once'), *s*- semelfactives are formed from base verbs of a different character (as in *острить* 'crack jokes'/*сострить* 'crack a joke'; Isačenko 1960: 266-267). In the conclusion to the section on *s*- prefixed semelfactives from motion verbs, Isačenko groups the four types together, contrasting -*nu*- suffixed verbs like *боднуть* 'stab once', *рубануть* 'chop once' and *s*- prefixed verbs like *сострить* 'crack a joke', *сходить* 'walk someplace and back once' which mark semelfactivity overtly with verbs like *бросить* 'throw' that may express a single action but do not mark semelfactivity (Isačenko 1960: 272).

Most other treatments of semelfactivity in Russian are less comprehensive. Zaliznjak & Šmelev (2000: 118-120) mention the same four groups of verbs in their discussion of semelfactive Aktionsart, but suggest that the *s*- prefixed motion verbs

present a "different type of semelfactivity" ("*иной тип однократности*") without further specifying what this entails. Švedova et al. (1980: 598-599) list the *-nu-* and *-anu-* types under the same heading with *s*- semelfactives formed from non-motion verbs, but do not make any mention in that section of *s*- semelfactives formed from motion verbs. Švedova et al. (1980: 599) give the impression that *-nu-* and *-anu-* suffixed semelfactives are the rule, whereas *s*- prefixed forms are exceptional ("*В некоторых случаях одноактность действия может быть выражена прибавлением преф. с-*" 'In certain instances the semelfactivity of the action can be expressed by adding the prefix *s*-').

In view of what has been presented above, we suggest that in terms of verbal and actional semantics, there are in fact four types of semelfactives. The first type consists of what might be considered "prototypical semelfactives", which are marked with the suffix *-nu-*, e.g., *капнуть* 'drip [once]'. By the term "prototypical semelfactives" we mean that such verbs express one "quantum" of a situation that is chracteristically iterative, e.g., *капать* 'drip [repeatedly]': dripping tends to occur not once but repeatedly and in more or less regular intervals. Semelfactives suffixed in *-nu-* express one instance of such a situation, the default total construal of such situations, since the notion of totality applied to dripping is more likely to produce the construal of a single drop than of a number of drops grouped together.[3] This explains why native speakers sometimes have an intuition that such verbs are the "perfective partners" (Natural Perfectives) of their imperfective correlates. The second type of semelfactive is formed by suffixation with *-anu-* (which is currently more productive than *-nu-* for some verbs[4]), e.g., *рубануть* 'chop [once, hard]'. However, as the gloss suggests (cf. Isačenko 1960: 265-66), such verbs are not neutrally semelfactive, but usually add a nuance of intensity to the construal of the situation. As such, these verbs are more semantically removed from their imperfective source verbs and are thus not ordinarily considered to be "perfective partners" of the latter. Such verbs are considered substandard in Russian, in contrast to Ukrainian, where they are regularly included in dictionaries (cf. Sigalov 1963). Semelfactives of both types ordinarily express events that pass quickly, i.e., they are "momentary" verbs. The third type of semelfactive is the closed class of indeterminate verbs of motion prefixed with *s*-, e.g., *сходить* 'walk someplace and back once'. These verbs express a relatively objective construal of a single round-trip motion event, and are "semelfactive" inasmuch as such round trips tend to get repeated (e.g., going to the grocery store or

post office), though they are not by any stretch "momentary" verbs. The fourth type of semelfactive consists of non-motion verbs prefixed with *s*-, e.g., *сглупить* 'do something stupid'. Unlike verbs of motion prefixed with *s*-, they do not express objective construals of situations, but rather subjective assessments of actions (which comports with the fact that many of these verbs have adjectival roots that reflect the qualitative assessment of the action in question, e.g., *глуп*- 'stupid'). For example, there is no action that inherently instantiates the notion 'do something stupid'; rather, various material situations can be construed as 'doing something stupid' according to the subjective assessment of the speaker. The purely evaluative nature of non-motion verb semelfactives in *s*- divorces them from any particular temporal constituency, which is why they tend to have the feel of momentary predicates or achievements, and are in any case best viewed as "verbs of immediately ensuing result" ("*глаголы непосредственного, непрерывного эффекта*") in Maslov's (1948: 30) terms. Note that in his discussion Maslov includes one such semelfactive among his examples of verbs of immediately ensuing result, namely *струсить* 'act like a coward once'.

To summarize, scholars often list *-nu*- suffixed and *s*- prefixed semelfactives together, but do not undertake a systematic analysis of the relationship between these two groups. Scholars also differ on whether or not they include the motion verbs in their listing of *s*- prefixed types. We believe that there is basically a single system of semelfactivity in Russian, as outlined above. The analysis presented in section 3 provides a quatitative analysis that confirms this view, and thus fills a gap in the scholarly literature on Russian semelfactives.

3. Databases of *-nu*- and *s*- verbs and empirical analysis

This section tests the hypothesis that the relationship between *-nu*- and *s*- in forming semelfactive verbs approximates allomorphy. Statistical analysis and introspective interpretation of empirical data are applied to test the allomorphy hypothesis.

Allomorphs are traditionally defined as a group of two (or more) morphemes that have the same function, yet are in complementary distribution (Bloomfield 1935: Chapters 10 & 13; Matthews 1974: Chapter V). We will focus on the criteria of complementary distribution first, by showing that the distribution of *-nu*- vs. *s*- is determined by the suffixes of the verbs they are derived from. As we shall see, Imperfective base verbs suffixed in *-aj*- and non-productive I conjugation types prefer *-nu*- suffixation, whereas verbs suffixed in historical *-*ěj*- and II conjugation types

favor *s*- prefixation. Identity of function will be tested based on the meanings of the base verbs and how this motivates their cluster structures. Additional evidence that -*nu*- and *s*- semelfactives are part of the same semantic phenomenon is provided by a handful of verbs that admit both -*nu*- and *s*- in their morphological composition.

3.1 Complementary distribution of -*nu*- and *s*-

Two databases were constructed in order to investigate and compare the behavior of -*nu*- and *s*- semelfactives. A database of 296 base verbs[5] that form -*nu*- suffixed semelfactive perfectives was constructed by Anastasia Makarova based on material culled from Švedova et al. 1980, Zaliznjak 1980 and the "Exploring Emptiness" empty prefix database developed at the University of Tromsø. This database represents both -*nu*- and -*anu*- semelfactives, such as *плеснуть* and *плескануть*, which both mean 'splash once' are both formed from the base verb *плескать* 'splash'. A second database of 105 base verbs that form *s*- prefixed semelfactive perfectives was constructed by Laura Janda in consultation with Anastasia Makarova based on material culled from the 17 volume dictionary, Zaliznjak 1980, and Isačenko 1960. The *s*- database contains eleven prefixed Perfective motion verbs of the type *сходить* 'walk someplace and back once'. Both databases contain verbs that occur both with and without the reflexive particle -*sja*, such as *качать* 'rock something' and *качаться* 'rock', with the semelfactives *качнуть* 'rock something once' and *качнуться* 'rock once', and for *s*- the base verbs *ловчить* 'be cunning' and *ловчиться* 'be cunning' which yield *словчить* 'do something cunning' and *словчиться* 'do something cunning'.

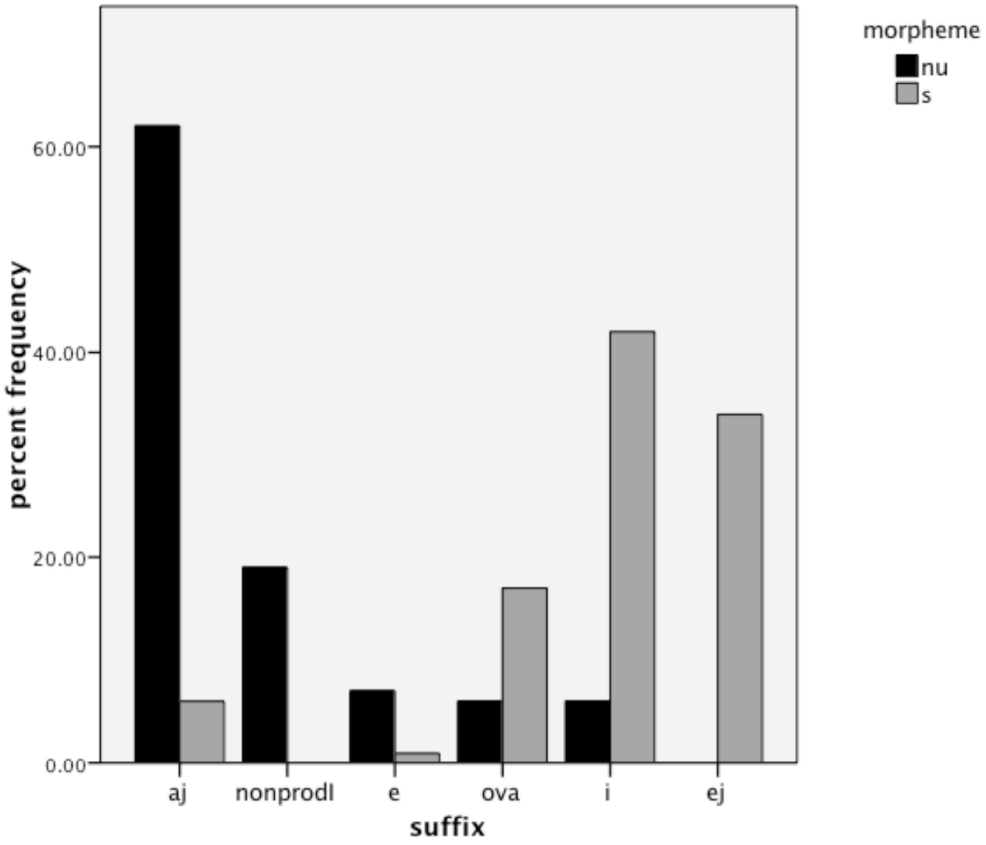
The difference in the sizes of the -*nu*- and the *s*- databases is important, since it confirms the trend identified in the cluster model that motion verbs form their semelfactives in *s*-, whereas other verbs mostly use -*nu*-. There are almost three times as many -*nu*- as *s*- semelfactives. It also appears that the -*nu*- semelfactives are, as a group, more frequent in corpora than the *s*- semelfactives, and that the latter group is dominated by a few frequent items, all of which are motion verbs, namely *сходить* 'walk someplace and back once', *съездить* 'ride someplace and back once', *сбегать* 'run someplace and back once', and *слетать* 'fly someplace and back once'.[6] Although word frequencies are available (see for example http://dict.ruslang.ru/), many of the verbs in our database are of very low frequency and are not represented in frequency dictionaries, and a number of confounding factors make a precise

analysis almost impossible. For example, most of the *s*- prefixed motion verbs have Imperfective homonyms such as *сходить* 'go down, go crazy (with *с ума* 'from one's mind')', *сносить* 'tear down, tolerate', *сбегать* 'run down', *сводить* 'lead down, seduce'. Furthermore, some of the verbs in both the *-nu-* and the *s*- databases have both resultative and semelfactive meanings, and thus some corpus examples are of resultative rather than semelfactive uses.[7] In order to responsibly characterize token frequencies for the semelfactive verbs, it would be necessary to inspect the context of every single example. Below we focus instead on the type frequencies of *-nu-* vs. *s*-semelfactives, sorted according to their verbal suffixes.

Table 1: Distribution of semelfactive morphemes by verb class

	base verbs that form *-nu-* semelfactives		base verbs that form *s*- semelfactives	
	raw frequency	% frequency	raw frequency	% frequency
-aj-	185	62%	6	6%
non-prod I	56	19%	0	0%
**-ě-*	21	7%	1	1%
-ova-	17	6%	18	17%
-i-	17	6%	44	42%
**-ěj-*	0	0%	36	34%
Totals:	296	100%	105	100%

Diagram 1: Distribution of semelfactive morphemes by verb class



Each base verb is coded according to its suffix, as summarized in Table 1. The relative distribution of suffixes for *-nu-* as opposed to *s-* is presented visually in Diagram 1. A chi-square analysis was performed to test the statistical significance of this distribution. The chi-square value is 257.3, with 5 degrees of freedom. This is an enormous value, with the probability that this distribution could have arisen by chance (p-value) < 2.2e-16.[8] A further relevant measure is Cramer's V, which gives the effect size for the difference detected by chi-square. The Cramer's V value here is 0.8, which is an extremely high value, indicating that this is a very robust effect.[9]

The *-nu-* database is dominated by verbs with the productive *-aj-* suffix, comprising 62% of the total verbs with that suffix. A typical example of a base verb in *-aj-* is *зевать* 'yawn' with the semelfactive *зевнуть* 'yawn once'. Five of the six *-aj-* verbs that form a semelfactive with *s-* are motion verbs, such as *бегать* 'run'*/сбегать* 'run someplace and back once'; the sixth is *хвастать* 'boast'*/схвастать* 'boast once' (as we will see below, this verb is unique in another way as well).

Non-productive I conjugation types form semelfactives exclusively with *-nu-*. These include primarily verbs suffixed in *-a-*, such as *лизать* 'lick'*/лизнуть* 'lick once', plus some non-suffixed types, including obstruent types like *сечь* 'cut'*/секануть* 'cut once' and non-suffixed resonant stems in *-j* such as *дуть* 'blow'*/дунуть* 'blow once'. There is in addition one base verb suffixed in *-o-* in this group: *колоть* 'prick'*/кольнуть* 'prick once' (and the reflexive *колоться* 'prick'*/кольнуться* 'prick once'). Thirteen of the verbs in the *-nu-* database are known to be involved in an ongoing language change in Russian whereby verbs originally suffixed in *-a-* are shifting to the *-aj-* suffix. The "Exploring Emptiness" suffix shift database developed at the University of Tromsø was consulted in order to correctly classify these verbs.[10]

The next group is of second conjugation verbs suffixed in historical *-*ě-*. Historical **ě* has merged with *a* after hushers and with *e* elsewhere. Twenty-one *-*ě-* suffixed verbs form semelfactives in *-nu-*, and these include both verbs with stem-final hushers, such as *кричать* 'shout'*/крикнуть* 'shout once', and verbs with other stem-final consonants, such as *свистеть* 'whistle'*/свистнуть* 'whistle once'. Only one *-*ě-* suffixed verb appears in the *s-* database, namely *видеться* 'see each other'*/свидеться* 'see each other once'.

Verbs suffixed in *-ova-* are divided fairly evenly between the two databases, though they constitute a larger proportion of *s-* semelfactives (17%) than *-nu-* semelfactives (6%). An example of the former is *малодушествовать* 'be fainthearted'*/смалодушествовать* 'act faintheartedly once'. In addition to examples such as *рисковать* 'risk'*/рискнуть* 'take a risk', the *-nu-* database contains four examples where the *-ova-* (or *-eva-*) is part of the verb stem, as in *клевать* 'peck'*/клюнуть* 'peck once'.

Seventeen *-i-* verbs form *-nu-* semelfactives, but comprise only 6% of the *-nu-* database; an example is *тормозить* 'brake'*/тормознуть* 'brake once'. The representation of *-i-* verbs in the *s-* database is stronger, with 44 verbs comprising 42% of that database. In addition to examples like *грубить* 'be rude'*/сгрубить* 'do something rude once' this group includes six motion verbs such as *ходить* 'walk'*/сходить* 'walk someplace and come back once'.

Verbs suffixed in historical **-ěj-* form their semelfactives exclusively with *s-*. These include: one verb where **-ě-* has merged with *e*, *робеть* 'be timid'*/сробеть* 'do something timid'; two verbs where **-ě-* has merged with *-a-* after hushers,

плошать ‘err’/*сплошать* ‘make a mistake’ and *подличать* ‘be a scoundrel’/*сподличать* ‘act like a scoundrel once’; and thirty-three verbs where the merger with *a* has occurred in the context of the -*ničaj*- suffix, as in *оригинальничать* ‘be original’/*соригинальничать* ‘be original once’.[11]

Thus although the distribution of base verb suffixes and semelfactive markers is not a perfect complementary distribution, it is statistically a near-equivalent. For two groups of suffixes, non-productive I conjugation and *-*ĕj*-, the distribution is entirely predictable. For the remaining four groups, there are strong trends, though there is overlap, particularly involving -*ova*- and -*i*-.

Another way to gauge the distribution of -*nu*- vs. *s*- across the verbal lexicon is via the semantic classes of the base verbs. Fortunately the Russian National Corpus does have a system for semantically tagging verbs, but unfortunately far from all verbs have been assigned to semantic classes. Of the 401 verbs in our combined database, 269 of the verbs that form semelfactives with -*nu*- and thirty-seven of the verbs that form semelfactives with *s*- have been tagged in the RNC, as shown in Table 2.[12] The paucity of the data for *s*- semelfactives precludes a statistical analysis, but indicates a similar distribution, which is entirely predictable for some semantic classes, though it shows significant overlap for movement. This data confirms Isačenko’s (1969: 267) introspective observation that -*nu*- and *s*- semelfactives come from base verbs representing different semantic domains. It is important to note that this data is not entirely independent of the suffix types. For example, verbs that express making sounds are often suffixed in -*aj*- (*квакать* ‘croak’/*квакнуть* ‘croak once’), -*a*- (*лаять* ‘bark’/*лайнуть* ‘bark once’) or *-*ĕ*- (*храпеть* ‘snore’/*храпнуть* ‘snore once’) in Russian, whereas verbs that denote behaviors are often suffixed in -*i*- (*глупить* ‘act stupid’/*сглупить* ‘do something stupid’). The semantic classes offer additional support to the claim that the semelfactive morphemes are distributed in a mostly predictable fashion, but do not offer independent evidence for this claim.[13]

Table 2: Semantic classes of base verbs as listed in the Russian National Corpus

	sound	impact	move	physiol	speech	behav	other
-*nu*-	56	58	80	21	21	3	30
s-	0	0	15	2	8	7	5

3.2 Verbs that incorporate both -*nu*- and *s*-

There are two further pieces of evidence that indicate that -*nu*- and *s*- semelfactives belong to a single semantic continuum, provided by verbs that use both morphemes, either as alternatives or simultaneously. An example of the first kind is *хвастать* 'boast', which forms both *схвастать* and *хвастнуть* as well as the extended version *хвастануть* (all with the meaning 'boast once'), the only verb of this type in our database.[14] There are three examples of the second kind which combine the two morphemes in a single verb: *сметнуть* 'leap sideways (once; of animals)' and the synonymous reflexive *сметнуться*, and *струхнуть* 'do one cowardly thing' (which is synonymous with *струсить*). The presence of verbs that can either form synonyms using both markers or use them simultaneously suggests that there is semantic overlap between the -*nu*- and *s*- semelfactives. Although -*nu*- and *s*- might not have their centers of gravity in exactly the same place, they are joined to each other and thus part of a single continuum.

3.3 Evaluation of the Allomorphy Hypothesis

Though -*nu*- and *s*- are certainly a non-prototypical example of allomorphy[15], the preceeding subsections present a variety of evidence, all of which supports the hypothesis that the suffix -*nu*- and the prefix *s*- behave like allomorphs in the formation of semelfactive verbs. The distribution of -*nu*- and *s*- across the suffixes of base verbs approximates a complementary distribution, and there are tangible differences in the semantic classes of base verbs that select -*nu*- as opposed to *s*-. Thus the distributional requirement for allomorphy is largely (though not perfectly) fulfilled. Verbs that use both markers indicate that -*nu*- and *s*- semelfactives belong to a single semantic group, thus providing evidence for sameness of meaning. In the face of all this evidence, we consider the allomophy hypothesis confirmed.

The case study of -*nu*- and *s*- raises the larger philosophical issue of what constitutes allomorphy. Complementary distribution is traditionally considered an all-or-nothing criterion for allomorphy, but is this expectation realistic given that language phenomena often exhibit scalar characteristics? It might be time to reflect on the fact that the traditional definition of allomorphy was proposed long before the advent of electronic corpora and statistical software that make it possible to probe the significance of distributional phenomena. We do not suggest that the traditional

definition be discarded, but rather that it be re-evaluated as a prototype rather than as an absolute standard. However, more research into examples of non-prototypical allomorphy must be conducted before this re-evaluation can be carried out and supplied with appropriate standards.

4. The historical development of semelfactive *s*-

The preceding sections have established that in modern Russian the semelfactive prefix *s*- stands in a relationship of allomorphy with the old semelfactive suffix *-nu-*.[16] This section attempts to make sense of the rise of semelfactive *s*- in the context of the development of the Russian aspectual system, though a comprehensive analysis cannot be attempted here. It is argued that the rise of semelfactive *s*- is connected with the development of purely temporal meanings of Russian prefixes and accordingly that it was part of a larger process of establishing prefixation as the marker of perfectivity in Russian. It is also argued that this process is indicative of the development of Russian aspect into a relatively subjective category.[17]

4.1 Constructing a timeline from the available data

In order to explore the time period when semelfactive *s*- became productive, we conducted searches in Sreznevskij's (1958) *Materialy dlja slovarja drevnerusskogo jazyka po pis'mennym pamjatnikam* (MSDJa) and volumes 23–26 of the *Slovar' russkogo jazyka XI–XVII vekov* (SRJa). The MSDJa contains no semelfactives prefixed in *s*-.The SRJa contains semelfactives in *s*-, but has not yet published all the entries for words beginning with *s*-, so our data are incomplete. Nevertheless, the available data do give an estimate of when semelfactive *s*- arose in Russian. The search yielded fifteen lexemes that formed semelfactive verbs with *s*- in Old Russian. They are given in order of date of attestation in (1). Numbers preceding individual meanings indicate the numbering of the senses in the SRJa.

(1)	*скривити*	*2. поступить неправильно* 'act incorrectly', XIV–XV cent., *3. сказать неправду* 'say something untrue', XVI cent.
	слукавствовати	*слукавить*, *схитрить*; *сказать неправду*

	‘act cunningly, use cunning, say something untrue’, XIV–XVI cent.
сгрубити	*проявить непочтительность, нагрубить, оскорбить* ‘offend’, 1458.
сбродити	*сделать что-л. дурное, натворить, накуролесить* ‘do something wicked, do [something bad], play a trick’, 1494.
слуковати	*1. поступить нечестно, коварно* ‘act dishonorably, treacherously’, 1499,[18] *2. злословить* ‘say something spiteful’, 1499.[19]
своровати	*1. совершить противозаконное действие* ‘commit an unlawful act’, 1584, *2. совершить какой-л. незаконный политический поступок* ‘commit some unlawful political act’, 1596.
солгати	*ошибиться, допустить ошибку, оговорку* ‘make a mistake, allow a mistake, make a slip of the tongue’, XVI cent.
сбѣгати	*быстро съездить (до какого-нибудь места)* ‘drive quickly to some destination [and back]’ XVI–XVII cent.
сглупати (зглупати)	*сделать глупость, оплошать* ‘do something stupid, take a false step’, 1609.
сдуровати	*поступить глупо* ‘act stupidly’, 1614.
сбредити	*сказать что-л. вздорное* ‘say something foolish’, 1633.
сблудити/соблудити[20]	*3. погрешить в чем-либо* ‘make a mistake’, 1666. *4. сделать что-л. дурное; нашалить, напроказить* ‘do something wicked, be naughty, play a prank’, 1640.
сблядовати	*высказать что-л. глубоко ошибочное* ‘say

	something egregiously erroneous', 1679/XVIII cent.
скричати	*закричать, воскликнуть* 'shout, exclaim', XVII cent.
слазити	*сходить за чем-л. (с целью принести)* 'go to get something (for the purpose of bringing it back)', XVII–XVIII cent.

Such a small sample precludes definitive conclusions, but let us nevertheless consider these data at face value. Of these fifteen verbs, none are attested before the fourteenth century. All of these verbs express a negative construal of some action with the exception of *сбѣгати* 'ride to some place and back', *слазити* 'go to get' and *скричати* 'shout'. Note that these three verbs are not attested before the sixteenth century. Thus, it appears that semelfactive *s*- was originally limited to predicates expressing a negative construal of some verbal action or other act. Only later, in the sixteenth or seventeenth century, did semelfactive *s*- begin to be used to create verbs without a negative construal. As was pointed out in section 2, many semelfactive verbs prefixed with *s*- are deadjectival. The verbs of motion in *s*- with the round-trip meaning are a notable exception in this respect and seem to be a relatively late and possibly separate development.

Regarding the time when semelfactive *s*- became productive, these data indicate an apparent increase in its productivity in the seventeenth century, as shown in (2):

(2) Distribution of the attestations over time:

14th cent.:	2
15th cent.:	3
16th cent.:	3
17th cent.:	7

Though these data are incomplete and fairly scant, the apparent rise in productivity in the seventeenth century they indicate is consistent with what is already known about the history of aspectual prefixation in Russian. In particular, other

Russian prefixes developed productive temporal meanings at around the same time. These developments as they relate to semelfactive *s*- are discussed in the next section.

4.2 The rise of prefixal semelfactives in the Russian aspect system

Böttger (2004) observes that the prefixes *ot(ъ)*-, *po*- and *za*- acquired their current temporal meanings relatively late. It was some time after the compilation of the *Primary Chronicle* (i.e., the thirteenth century) that the prefix *ot(ъ)*- developed a productive finitive meaning, e.g., *отбити* 'stop beating' (first attested in 1675), and the prefix *za*- developed an ingressive meaning, e.g., *забѣгати* 'begin hiding' (first attested 1650). In Böttger's corpus, *ot(ъ)*- and *za*- are not attested in their temporal meanings until the seventeenth century. She finds that *po*- underwent the same basic development with regard to its delimitative meaning, e.g., *понѣти* 'sing a while' (first attested in 1600), although delimitative *po*- is attested with a limited set of stative verbs in earliest Old Russian and Old Church Slavic texts. Sigalov (1975) observes that the widespread productivity of delimitative *po*- began in the sixteenth century and increased through the modern period (for two detailed accounts of the development of delimitative *po*-, see Sigalov 1975 and Dickey 2007).

Inasmuch as other Russian prefixes appear to have developed salient temporal meanings in the sixteenth and seventeenth centuries, the timing of the rise in productivity of semelfactive *s*- that is indicated by the available data also seems plausible. Further, the assumption that Russian prefixes developed temporal meanings from the sixteenth century onward gains significance when one considers recent theories of the timing of the grammaticalization of Russian aspect. Bermel (1997) shows that Russian aspect developed into a grammatical category continuously, reaching full grammaticalization relatively late; Nørgård-Sørensen (1997) argues that Russian aspect emerged as a grammatical category in the seventeenth century.[21] The development of temporal meanings of Russian prefixes was a crucial process in this grammaticalization (see Dickey 2005, 2007 on the significance of the rise of delimitative *po*- for the grammaticalization of Russian aspect). In our view, the rise of semelfactive *s*- is most easily viewed as part of the overall systematic temporalization of Russian prefixes, even if it was not the central development in this process (which was probably the peculiar rise of delimitative *po*-).

The development of salient temporal meanings for Russian prefixes was in turn a crucial step in the formation of the aspect opposition in Russian, in which the prototypical marker of perfectivity is a prefix (this is not a trivial statement, cf. Shull's 2003: 230 conclusion mentioned in footnote 17). We can briefly mention that the modern Russian aspectual system (as well as those of Belarusian and Ukrainian) differs from those of the West and South Slavic languages in that it includes both prefixed delimitatives in *po*- as perfective partner verbs of atelic imperfective verbs (e.g., *гулять* 'stroll'/*погулять* 'stroll a while') as well as prefixed semelfactives in *s*- (e.g., *малодушничать* 'act faintheartedly'/*смалодушничать* 'do something fainthearted, act faintheartedly once'). The latter is particularly interesting in light of the fact that Slavic languages already had a means for creating semelfactive verbs, the reflexes of the Common Slavic suffix -*nǫ*- (e.g., Old Church Slavic *dvignǫti* 'move, shift').

In view of the above, and in view of the fact that the West and South Slavic languages did not develop prefixed semelfactives, we consider the fact that Russian developed prefixed semelfactives when the language already possessed a suffix for deriving semelfactive verbs to be a piece of circumstantial evidence for the view that Russian established prefixation as the grammatical marker of perfectivity in the sixteenth and seventeenth centuries. It is interesting that Nikiforov (1952: 53) makes a direct connection between prefixation as a marker of perfectivity and the attenuation of this function of the suffixes -*i*- and -*nu*-:

> The great significance of prefixation as a means of expressing perfectivity in the sixteenth century is evidenced by the fact that the expression of completion (exhaustion) of an action or process by suffixes (-*i*-, -*nu*-) in unprefixed verbs is obscured, ceases to function. These unprefixed perfective verbs are replaced by formations with grammaticalized prefixes as being morphologically more transparent. (translation ours—SMD & LAJ)

Xlebnikova-Prokopovič (1956: 148) also observes that since the seventeenth century the expression of the aspect correlation by means of prefixation has expanded at the expense of its expression by means of differing suffixes, as evidenced by the

demise of pairs such as *напоять/напоити* ‘give to drink’, *научати/научити* ‘instruct’, etc., in favor of pairs such as *поить/напоить* ‘give to drink’, *учить/научить* ‘instruct’, etc.

This view of the development of the relative roles of prefixation and suffixation should not be interpreted as claiming that semelfactive *-ну-* no longer forms perfective verbs, as it clearly does (cf., e.g., occasionalisms like *сникерснуть* ‘eat a Snickers candy bar’). Such verbs, however, are often not neutral perfective verbs but in fact expressive. In this regard, a distinction must be drawn between a neutral perfectivizing function and the specifically semelfactive function of the suffix *-ну-* (cf. Dickey 2003). The suffix *-ну-* is no longer a productive means of forming a neutral perfective verb in Russian. Furthermore, innovative *-ану-* has overtaken *-ну-* in a number of verbs, where *-ану-* appears with higher frequency in the RNC: *резануть/резнуть* ‘slice once’, *рубануть/рубнуть* ‘chop once’, *сыпануть/сыпнуть* ‘strew once’, *шугануть/шугнуть* ‘scare off once’. Native speakers that we have consulted say they do not use *резнуть* ‘slice once’, preferring innovative *резануть*, regardless of its added nuance of intensity of the action.

Following Dickey (2003), we suggest that *-ну-* went from being a more or less neutral perfective suffix to a specifically procedural “semelfactive” suffix, eventually spawning the semelfactive/intensive suffix *-ану-*. Given the current state of affairs in modern Russian, this development must have occurred sometime between the sixteenth and nineteenth centuries. We further suggest that as *-ну-* gained status within the Russian aspectual system as a specifically semelfactive (as opposed to perfective) suffix, i.e., as semelfactivity was established as a distinct actional category in Russian, Russian began to derive prefixal semelfactives by means of the prefix *s-*. This makes sense because Russian was at this time establishing prefixes as the markers of perfectivity while also developing a host of actional categories expressed by prefixes (delimitative, ingressive, perdurative, etc.). This hypothesis comports with the facts as far as we are aware, and also explains why prefixal semelfactives arose at all in Russian. Why it was the prefix *s-* that filled this semantic slot is a separate issue, and is taken up in the following section.

4.3 Why *s-* as a semelfactive prefix?

We should point out that any hypothesis on this issue must remain on the level of speculation, and a detailed analysis cannot be offered here. However, we believe that

we have identified the main outlines of the process. The following account draws heavily from the account of the semantic nature and development of the prefix *s*- in Slavic given by Dickey (2005), which in turn relies on the material collected by Słoński (1937).

In Common Slavic the prefix *sъ*- had two primary spatial meanings, the centripetal meaning (i.e., motion from many directions to a single landmark), e.g., OCS *sъšiti* 'sew together' and the downward-ablative meaning (i.e., motion downward from a landmark), or "generally motion from any point" (Słoński 1937: 225), e.g., *sъtręsti* 'shake off'. By the time of OCS, the centripetal meaning already had a productive resultative meaning, e.g., *sъzьrěti* 'ripen', which was the source for its eventual perfectivizing function in Russian and other Slavic languages. Evidence that the centripetal meaning of *sъ*- was productive in the derivation of resultative verbs are change-of-state verbs such as *sъmrьznǫti sę* 'freeze', *sъstarěti sę* 'age' and *sъsъxnǫti sę* 'dry up' created on the model of centripetal verbs of motion such as *sъniti sę* 'come together'. Such inchoative predicates have no inherent predisposition towards one kind of (spatial) telicity over another: the fact that they were derived according to the reflexive centripetal model suggests that the centripetal meaning of *s*- was productively metaphorized to create resultative change-of-state verbs.

The resultative meaning of *s*- was also applied to factitive verbs relatively early, cf. Old Russian *свышити* 'heighten', *сгладити* 'destroy [i.e., flatten]', *сгустити* 'thicken', *скрѣпити* 'strengthen', etc. In the inchoative and factitive verbs given above, *s*- came to signal simply the change of state, and the verb stem itself signaled that the verb was a facititive (*i*-stems) or inchoative (*ě*-stems). The extension of resultative *s*- to factitives was an early step in a larger process of the development and spread of *s*- as an empty perfectivizer in Russian (which was completed with the relatively late loss of secondary imperfectives such as *сказывати* 'say'), including not only some *i*-stem transitives, e.g., *сгноить* 'let rot, ferment', *сгорбить* 'make bent', but ultimately with a large number of other verbs such as *соврать* 'lie', *сделать* 'do, make', *скомандовать* 'command', *смастерить* 'make', *солгать* 'lie', etc. The development of the abstract change-of-state/perfectivizing function of *s*- lent the prefix considerable flexibility in terms of the temporal constituency that it could accommodate in a predicate, with the result that it could easily prefix both accomplishments, e.g., *сыграть* 'play' and *спеть* 'sing', and achievements, e.g.,

смежить [глаза] ‘close [one’s eyes]’ *схватить* ‘grab’. This actional flexibility of *s*-, which allowed the prefix to perfectivize achievement verbs and verbs with flexible temporal consituency (such as verbs of immediate ensuing result) must have been one reason for its extremely high productivity as a perfectivizing prefix in the seventeenth century, as noted by Xlebnikova-Prokopovič (1956: 149). This actional flexibility is in our view also the reason why *s*- emerged as the semelfactive prefix in Russian.

The largest group of modern Russian semelfactives in *s*- are *i*-stems, e.g., *сглупить* ‘do something stupid’ (cf. section 3.1), and this model is attested relatively early (cf. *скривити* ‘act incorrectly’). Note that this latter verb is also attested in the factitive meaning ‘make bent’. We consider it likely that such factitives were the source for the new class of semelfactives, due to the flexibility of such factitives as regards temporal constituency and also to the fact that many existing semelfactives in *s*- have an inherently quasi-transitive sense, which is why they are often paraphrased with transitive phrases, e.g., *сглупить* = *сделать глупость* lit., ‘commit stupidity’. The quasi-transitive sense of semelfactives in *s*-, combined with the fact that in Russian and other Slavic languages the originally factitive/transitive meaning of *-i-* has become attenuated, cf., e.g., *загрустить* ‘grow sad’, *ходить* ‘walk’, lends plausibility to this view.

This brings us to the semelfactive verbs of motion such as *сходить* ‘walk someplace and come back once’. The available data provide no evidence that these verbs arose before or as early as the first deadjectivals such as *скривити* ‘act incorrectly’. As the semelfactive verbs of motion in *s*- are not momentary verbs, it is possible that they arose either secondarily (which comports with the available attestation dates) as *s*- became entrenched as a semelfactive prefix, or even that they arose in a slightly different way and that the two groups of verbs were subsequently reanalyzed together more or less as a single class of semelfactives in *s*-. We in fact are inclined to the second view. In this respect it is interesting that there are three perfective senses of *сходити* attested by the MSDJa: the first is defined as *объехать, обойти* ‘go around, all over [a space]’; the second is defined as *совершить путешествие* ‘take a trip/journey’; the third is defined as *совершить поход* ‘go on a military campaign’. It is likely that all three senses involve the resultative sense of *s*-. The latter two senses resemble the meaning of Modern Russian *сходить* ‘walk someplace and come back once’, but they do not appear to involve a round trip, only the successful completion of the one-way trip, and do not involve actions that are

completed relatively quickly. Dickey (forthcoming) argues that *хоⷣиmи* in Old Russian was *not* indeterminate, but rather a manner-of-motion verb meaning 'walk' (also 'march' in military contexts), so that it is misguided to assume indeterminate semantics for Old Russian *хоⷣиmи* and then arrive at some meaning compositionally by adding a resultative meaning of *s*-. Rather, these senses should be viewed as the completion of a journey on foot and a military march. Inasmuch as this is true, the sense of going and coming back expressed by Modern Russian *сходиmь* is a relatively late development (as is the single-round-trip meaning of Modern Russian *ходиmь* 'go [indeterminate]'—for discussion, see Dickey forthcoming).

Returning to the classification of semelfactives presented in section 2, it appears that the relationship of allomorphy between -*nu*- and *s*-, and accordingly the fact that *s*- has come to form non-prototypical semelfactives (in other words, semelfactive verbs from verbs that are not clearly iterative) are connected to the development of Russian aspect from a relatively objective category to a more subjective category. According to Holden (1990: 150–151), the development of Russian aspect represents a case of a cognitive tendency to move away from prototypical perceptions of events to viewing reality from "alternative perspectives". This process can be seen in the spread of the aspect opposition from accomplishment predicates to other predicate types (cf. Bermel's 1997 analysis). A case in point is the extension of the aspect opposition to the whole class of atelic activities as a result of the sharp rise of *po*-delimitatives since the sixteenth century. The rise of semelfactive *s*- may be seen as a part of the same overall process in that has functioned to extend the category of semelfactive predicates beyond those predicates that are viewed by default as single occurrences in a linear series of subevents. In other words, semelfactive *s*- created the possibility of construing relatively stative/homogeneous situations, e.g., 'being stupid' or 'acting stupid', in terms of a single quantum, i.e., 'being/acting stupid *once*', as well as construing the emergent category of indeterminate motion in terms of a single quantum, i.e., 'going someplace and back *once*'. The development of such an alternative construal of relatively stative/homogeneous situations is simultaneously both part of the overall development of Russian aspect into a relatively more subjective category and also a remarkable step in the development of relatively more subjective categories of procedural verbs themselves.[22] This latter process has been very uneven in its development in the various Slavic languages and has received very little attention in the Slavic linguistic literature to date.

4.4 Summary of historical findings

The historical data at our disposal depict the development of *s*- as a semelfactive prefix in the context of the evolution of Russian aspect in the sixteenth and seventeenth centuries. This was the time when Russian aspect as we know it today was being consolidated as a grammatical category and extending its repertoire of alternative, actional (Aktionsarten) perspectives on events. The rise of semelfactive *s*- coincides with the rise of temporal meanings for other prefixes, such as ingressive *za*-, delimitative *po*- and finitive *ot*-. In this process, prefixation became a prototypical marker of perfectivity. The prefix *s*-, which initially combined centripetal and downward-ablative meanings, was metaphorized and applied to factitive verbs (in particular *i*-stems) early on. As a result, *s*- combined not only with accomplishments but also with achievements, giving *s*- a certain actional flexibility that was compatible with semelfactivity. The extension of *s*- to denote a single round trip when used with a motion verb is likely secondary, but a part of the overall rise of semelfactive *s*-.

5. Conclusions

The allomorphy hypothesis implicit in Janda's (2007) cluster model of Russian aspect is supported by the distribution of semelfactive markers across verb classes. Verbs from non-productive first conjugation classes, plus verbs suffixed in *-aj*- and **-ě*- form semelfactives almost exclusively with *-nu*-; verbs suffixed in **-ěj*- form semelfactives exclusively with *s*-; and there is some overlap for verbs suffixed in -*ova*- and -*i*-. On the basis of an empirical study and statistical analysis, we conclude that the *-nu*- and *s*- semelfactives do indeed form a coherent entity in Russian, justifying the use of a single umbrella term, the Single Act Perfective, to describe verbs like *хохотнуть* 'guffaw once', *схитрить* 'do one clever thing', and *сходить* 'walk someplace and back once'. The historical data further confirm this conclusion, placing the rise of semelfactive *s*- squarely in the time period when other prefixes were developing actional temporal meanings, namely the sixteenth and seventeenth centuries.

In addition to contributing to the solution of a practical problem in Russian linguistics, the previously unaddressed issue of the relationship between *s*- and *-nu*- semelfactives, this study raises both synchronic and diachronic theoretical issues. Allomorphy traditionally requires all-or-nothing compliance to complementary

distribution. However, how are we to react in the face of an overwhelmingly robust distribution when the chance that it is accidental is statistically zero and the effect size is enormous? The case of *s*- and *-nu*- brings attention to the fact that linguistic phenomena are often gradient, not + vs. -. Perhaps now that we have better resources in terms of both data access and statistical analysis it is time to re-evaluate some core concepts in linguistics. Similar issues might arise for other definitions, such as those of allophony, markedness, and neutralization. Considerable research needs to be done in order to establish what kinds of gradience phenomena are relevant and what standards should be used to evaluate them.

Examination of the historical rise of semelfactive *s*- brings into relief the need for more research on the evolution of actional perfectives in Russian, and indeed on the evolution of aspect in general in Slavic. There remains much work to do to describe how Russian aspect became what it is today, how all the prefixes and suffixes fit into this puzzle, and how this development differs from that in the sister languages of the Slavic family.

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* The authors would like to thank the University of Tromsø and the Norwegian Research Council for supporting this research. Authorship is shared equally.

[1] There are a few exceptions to this rule, since there are some verbal stems that simply do not form secondary Imperfectives, such as prefixed forms of *кипятить* 'boil'.

[2] Cf. Raxilina (2004: 7) who characterizes the Determined motion verb *идти* 'walk' as "always non-arbitrary" and "hence goal-oriented" in contradistinction to the Non-Determined *ходить* 'walk'.

[3] Non-iterative verbs have at various times produced semelfactives by suffixation with -nu, e.g., *глянуть* 'glance' and *шелестнуть* 'rustle' (which are correlated to stative verbs in *-ĕ-*) but this pattern has not been particularly productive.

[4] There are eighteen base verbs that form semelfactives in both *-nu-* and *-anu-* attested in the RNC. Five verbs prefer *-anu-*, and the remainder prefer *-nu-*. However a paired t-test shows that the difference in the mean frequencies (519 for *-nu-* vs. 44 for *-anu-*) does not reach statistical significance. For more discussion see Makarova & Janda forthcoming.

[5] In all but one instance, the "base verb" was an Imperfective verb with no aspectual prefix or suffix. The one exception was Perfective suppletive *сказать* 'say, tell', which forms the *-nu-* semelfactive *сказануть* 'say one thing'. All base verbs in the *s*- database were Imperfectives.

[6] Janda 2008 b presents manually sorted data on *s*- semelfactives from motion verbs from the 5.3M word subset of the Russian National Corpus that is disambiguated for homonymy. Each example (except for *съездить* 'ride someplace and back once' which is unambiguous) was inspected to confirm that it did indeed contain a Perfective semelfactive verb. The subcorpus contains 193 examples of Perfective *сходить* 'walk someplace and back once', 98 examples of Perfective *съездить* 'ride someplace and back once', 58 examples of Perfective *сбегать* 'run someplace and