

What makes Russian bi-aspectual verbs special?

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Abstract

Nearly all Russian verbs are unambiguously either Perfective or Imperfective. A few hundred verbs are Bi-aspectual, and most of these verbs are foreign borrowings. Although scholars have often noted a correlation between foreign origin and Bi-aspectuality, no one has ever considered the fact that many borrowed verbs are not Bi-aspectual, nor has anyone ever compared the behavior of Bi-aspectual and non-Biaspectual foreign verbs. An empirical study shows that nearly 40% of borrowed verbs are Imperfective, not Bi-aspectual and that their behavior, in terms of formation of *po-* prefixed perdurative verbs denoting ‘do X for a while’ is significantly different from the behavior of Bi-aspectual verbs. Bi-aspectual borrowed verbs are less prone to create *po-* forms than Imperfective borrowed verbs. This difference in behavior is predicted by Janda’s “cluster” model of Russian aspect, which has been proposed as an alternative to the traditional “pair” model, and points to a difference in the semantic profile of Bi-aspectual vs. Imperfective borrowed verbs. This study thus sheds light on the interaction between lexical semantics and aspect.

Keywords: aspect, Russian, Bi-aspectual, foreign borrowing

1. Introduction*

Russian is famous for its aspectual distinction between Perfective (the semantically marked value¹, in this paper signaled by a superscript “p”) and Imperfective (signaled by a superscript “i”). Russian aspect is obligatorily expressed by all verb forms, and furthermore is formally marked by a system of aspectual affixes (prefixes and suffixes). For example, ‘write’ can be rendered in Russian as an Imperfective simplex verb *pisatⁱ*, or can be prefixed to yield the corresponding perfective *napisat^p*. A few hundred “Bi-aspectual” verbs can express aspect in the absence of these affixes, thus constituting exceptions to the overall system of morphological mark-

ing of aspect in Russian. To illustrate, the Bi-aspectual verb *likvidirovat'*^{2p/i} 'liquidate' can express both Perfective and Imperfective aspects without the addition of any affixes.

There are good reasons to associate Bi-aspectuality with the borrowing of foreign verbs into Russian: most Bi-aspectual verbs are foreign and foreign verbs are often Bi-aspectual. However, crucial questions concerning this association have never been addressed in the literature, such as: What is the relationship between foreign verbs and Bi-aspectuality? and Why do some foreign verbs become Bi-aspectual in Russian while others become Imperfective simplex verbs? On a more theoretical level, it is also necessary to ask What is the relationship between Bi-aspectuals and the Russian aspectual system? This article will explore these issues in light of new research on the metaphorical motivations for Russian aspect (Janda 2004 and forthcoming a), and will also present an empirical study of foreign verbs and their behavior in Russian. I will show that many foreign verbs become Imperfective simplex verbs, not Bi-aspectual verbs in Russian. I will argue that the lexical semantics of the borrowed verb strongly influence its aspectual fate in Russian. A semantic distinction that is crucial to the entire aspectual system is Completeness (Janda forthcoming a). A Completable action heads toward a result, whereas a Non-Completable action is something that can be engaged in without heading toward a result. Completeness is motivated by the metaphor: A COMPLETABLE ACTION IS TRAVEL TO A DESTINATION. Bi-aspectual verbs are special because they tend to lack a Non-Completable construal, a claim that is confirmed by empirical data.

This article begins with what is known (or assumed to be known) about the Russian aspectual system (2.0) and the status of borrowed and Bi-aspectual verbs in Russian (3.0). Recent research on the Russian aspectual system predicts that Bi-aspectual verbs should have a very characteristic profile of aspectual behavior (4.0). An empirical study of over 550 foreign verbs demonstrates that the profile of borrowed Bi-aspectual verbs in that group clearly contrasts with the profile of borrowed Imperfective verbs (5.0), supporting the predictions of the metaphorical model. In conclusion (6.0), I will assert that lexical semantics do affect the grammatical category of aspect and its morphological expression, and that these effects can yield measurable differences in aspectual behavior.

2. Traditional assumptions about the Russian aspectual system

This section will describe the Russian aspectual system in its prototypical instantiation, in other words, excluding discussion of Bi-aspectual verbs. There is nothing unprecedented about discussing aspect in Russian while ignoring the Bi-aspectuals; indeed Glovinskaja's recent book (2001) on Russian aspect makes no mention of Bi-aspectuals (either individually or as a phenomenon), and aside from one article in 1998 by Čertkova and Čang and another one in 1999 by Jászay, there have been little more than perfunctory remarks on the topic since the 1960s. I will look first at the morphology of Russian aspect and then give a brief overview of its semantic expression.

A given verb in Russian is either entirely Perfective (semantically marked) or entirely Imperfective (semantically unmarked) in all tenses and forms. Both the semantic and the morphological expression of aspect are obligatory for all forms of all verbs. Russian is thus unlike most other languages with Perfective and Imperfective aspect, for which aspect is expressed only in restricted contexts (for example only in the past tense), and Imperfective is the marked value (as in French).² In other words, Russian verb forms are always either Perfective or Imperfective, regardless of tense or other grammatical categories, and their aspectual status is also signaled morphologically. As a consequence most (but not all) scholars consider aspect to be a derivational, not an inflectional, phenomenon in Russian (cf. Isačenko 1960; Dahl 1985; Zaliznjak and Šmelev 2001; see also discussion in Janda forthcoming b).

The morphological expression of aspect is achieved primarily by means of Perfectivizing prefixes (*pro-*, *za-*, *s-*, *ot-*, *na-*, *po-*, *vy-*, *o-*, *raz-*, *ob-*, *u-*) and Imperfectivizing suffixes (*-yva-/iva-*, *-va-*, *-a-*).³ There is also a Perfectivizing semelfactive suffix (*-nu*) which is more restricted in its use.

This morphology yields the following types of verbs: verbs with no aspectual affixes, which are typically Imperfective like *pisat'* 'writeⁱ'; verbs with prefixes, which are typically Perfective like *napisat'* 'write^p', *perepisat'* 'revise^p', *popisat'* 'write^p (for a while)'; and verbs with suffixes, which are typically Imperfective like *perepisyvat'* 'reviseⁱ'. There are some deviations to this pattern, such as unaffixed Perfectives like *dat'* 'give^p' and prefixed Imperfectives like *nasledovat'* 'inheritⁱ', verbs with multiple prefixes like *poperepisyvat'* 'revise^p (for a while)', and semelfactive suffixed Perfectives like *čixnut'* 'sneeze^p (once)', but generally there are aspectually related verbs that morphologically disambiguate such cases, such as *davat'* 'giveⁱ', *unasledovat'* 'inherit^p', *perepisyvat'* 'reviseⁱ', and

*čixat*ⁱ ‘sneeze’ⁱ. There are also a few suppletive verbs that break these rules, such as *kupit*^p ‘buy^p’ vs. *pokupat*ⁱ ‘buyⁱ’. However, most Russian verbs fit into the pattern of Imperfective simplex, to which one can add a prefix to get a Perfective verb, to which it might be possible to add a suffix to get an Imperfective verb. Overall this is a fairly robust and reliable system (cf. Timberlake’s 2004: 401-7 “tripartite system”).

The meaning of Russian aspect is the subject of a vast literature which cannot be adequately surveyed in this article (cf. Janda 2004). Suffice it to say that this literature has primarily focused on describing aspect in terms of semantic features, and since Perfective is taken to be the marked member of the opposition, most features describe Perfective aspect, leaving Imperfective as the default. The most common feature labels are “bound-ness” (Forsyth 1970; Avilova 1976; Jakobson 1957/1971 and Padučeva 1996; cf. also “delimitation” in Bondarko 1971; “closure” in Timberlake 1982; and “demarcatedness/dimensionality” in van Schooneveld 1978), “totality” (Comrie 1976; Dickey 2000; Durst-Andersen 1992; Smith 1991; Isačenko 1960 and Maslov 1965; cf. also “completion” in Vinogradov 1972), “definiteness” (Bondarko 1971 and Dickey 2000; cf. also “change” and “sequencing” in Durst-Andersen 1992 and Galton 1976), “punctuality” (Čertkova 1996; Mazon 1914), and “resultative” (Čertkova 1996 and Vinogradov 1972). If the Imperfective aspect is assigned a feature at all, it is most often “durativity” (Bondarko 1971; Padučeva 1996; Čertkova 1996). What the tradition of feature analysis tells us is that a Perfective verb describes a single, unique event viewed in its entirety at a given point in time, whereas the Imperfective describes all other events, especially those that are extended in time. What this tradition doesn’t tell us is that the Perfective and Imperfective aspects have several dozen, often seemingly contradictory uses that features are inadequate to account for. For example, the general-factual and “polite” imperative uses require Imperfective verb forms to describe unique whole events, whereas the Perfective is required for habitually sequenced events, despite the fact that these events are repeated over long and indefinite periods of time. Although features do pinpoint the most significant facts about the semantics of aspect, they gloss over the untidy realities of a very complex phenomenon.

Feature analysis has another relevant by-product, namely the notion of the “aspectual pair”, consisting of one Perfective and one Imperfective verb with the same denotation. The assumption that the “aspectual pair” is the exclusive or dominant pattern observed in the Russian aspect system is entrenched and pervasive in Russian linguistics (cf. Vinogradov 1938;

Šaxmatov 1941; Bondarko 1983; Čertkova 1996; Zaliznjak and Šmelev 2000; Glovinskaja 2001).

In this article I will not challenge the traditional assumptions about Russian aspect concerning the marked value of Perfective and the “tripartite” derivational system consisting of simplexes and affixed forms. I will suggest that the concepts of semantic features and the “aspectual pair” are in need of revision in order to account for the complex facts of Russian. In a sense, the revisions I will suggest (in section 4.0) extend and contextualize the traditional assumptions, giving them firmer semantic grounding, and it is precisely semantic factors that will be crucial in the analysis in this article. But before considering these semantic factors, one needs to examine what is known about borrowed and Bi-aspectual verbs in 3.0.

3. Traditional assumptions about borrowed and Bi-aspectual verbs in Russian

This section will define borrowed and Bi-aspectual verbs, discuss the status of borrowed and Bi-aspectual verbs in Russian, and outline the various paradigmatic, semantic, syntactic, and morphological constraints on Bi-aspectual verbs.

Borrowed verbs are verbs that cannot be traced to the common origins of Slavic languages and have entered Russian since it commenced its development largely independent of other Slavic languages. Although this is a long period (reaching from the 12th century to the present), there was very little activity in borrowing verbs until the Petrine period (late 17th century), when contact with and knowledge of western European languages became common among the Russian elite (Avilova 1968). All borrowed verbs in Russian contain the suffix *-ova-*, which integrates them into the inflectional system of Russian (without, however, providing any aspectual designation). The suffix *-ova-* is itself Slavic, but is most often used with various extensions in the presence of foreign stems, appearing as *-izova-*, *-irova-*, *-izirova-*, *-ficrova-*. Although the *-ova-* suffix is indispensable – without it a foreign word would lack inflection and also the ability to function as a verb in Russian – it is claimed that a desire to preserve the foreign flavor of borrowed verbs caused them to resist further affixation (Mučnik 1966; Avilova 1968). This meant that foreign verbs would resist aspectual prefixation and suffixation, supporting their recognition in Russian as Bi-aspectual verbs (both Mučnik 1966 and Gladney 1982 compare this to the importation of indeclinable foreign nouns such as *kino* ‘cinema’).

Bi-aspectual verbs are verbs that can express both Perfective and Imperfective aspect with the same morphological form, without recourse to the Perfectivizing and Imperfectivizing affixes described in 1.0. Estimates of the number of Bi-aspectual verbs vary. Mučnik (1966) Gladney (1982) and Anderson (2002, based on combined listings in dictionaries) suggest that there are approximately 600. Čertkova and Čang (1998) recognize 412 Bi-aspectual verbs, only 289 of which are “true Bi-aspectuals” (the other 123 verbs are claimed to behave as both Bi-aspectuals and as “paired” verbs). Wheeler 1972/1992 lists 348 verbs as Bi-aspectual. Indeed, as Jászay (1999: 169-170) laments, dictionaries do not agree on the identification of verbs as Bi-aspectual (cf. also Čertkova and Čang 1998: 24). Nor do scholars. Mučnik (1966: 69), for example, rejects Isačenko’s (1960: 144) assignment of Bi-aspectuality to certain forms of *organizovat*^{p/i} ‘organize^{p/i}’. And, as Jászay’s (1999) research shows, native speakers also vary in their acceptance of Bi-aspectual forms, leading him to coin the term “častičnaja dvuvidovost” (“partial Bi-aspectuality”).

There is even less clear information on the status of borrowed verbs in Russian and their relationship to Bi-aspectuality. Avilova (1968: 66) opens her article with the statement “Принято считать, что глаголы с заимствованной основой в русском языке являются двувидовыми” (“It is commonly assumed that verbs with borrowed stems in Russian are Bi-aspectual”), an assumption that she never challenges, although she repeatedly acknowledges the existence of borrowed verbs that are merely Imperfective (Avilova 1968: 66, 70, 71, 72, 73, 76). Čertkova and Čang (1998: 15) recognize 48 Imperfective verbs, nearly all of them foreign, among verbs (erroneously in their view) listed as Bi-aspectuals in dictionaries. It is common for scholars to note that some Bi-aspectual verbs are developing prefixed Perfectives, which means that the borrowed simplex verb is Imperfective (Isačenko 1960; Mučnik 1966; Jászay 1999; Zaliznjak and Šmelev 2000). However, with the lone exception of Avilova (1968; and these are merely parenthetical remarks), no one mentions the fact that some borrowed verbs do not enter the Russian lexicon as Bi-aspectuals, and no one has investigated the relationship between Bi-aspectual and Imperfective verbs among borrowed verbs in Russian. Avilova (1968) furthermore claims that the foreign verbs that do enter Russian as Imperfectives are *imperfectiva tantum* (Imperfective isolates with no aspectually related Perfective verbs listed in dictionaries).

Mučnik (1966: 64) challenges the prevailing assumption that foreign Bi-aspectual verbs are predominantly scientific, technical, or professional terms. He claims that only 35% of bi-aspectual verbs fall into those three

groups, and that the rest belong to the common lexicon of the literary language. Unfortunately there is no corresponding data on the status of non-Bi-aspectual foreign verbs.

It is true that there is some correlation between Bi-aspectuality and foreign origin among verbs, but this fact has always been examined only by looking at the frequency of foreign borrowings among Bi-aspectuals. Čertkova and Čang (1998: 13) state that only about 10% of Bi-aspectual verbs are part of Russian's Slavic heritage. Anderson's (2002) combined list shows that 95% of Bi-aspectual verbs in Russian are foreign. Isačenko (1960: 144) points out that in addition to native and foreign Bi-aspectual verbs, there is some marginal tendency to build new Bi-aspectual verbs using Russian stems and the *-ova-* suffix: *zvukoficirovat*^{p/i} 'equip with sound^{p/i}'. But no one has ever asked how many foreign verbs are Bi-aspectual. Nor has anyone pointed out the significant role of foreign verbs in building parts of the Russian lexicon other than the Bi-aspectuals. For example, foreign borrowings account for 20%⁴ of Imperfective only verbs and are the sole productive source of such verbs in Russian, but there is no mention of foreign verbs in Zaliznjak and Šmelev's (2000: 85-6) discussion of Imperfective isolates.

One thing that most scholars do agree on is that Bi-aspectual verbs are not ambiguous in their expression of aspect. In other words, Bi-aspectual verbs do not express a neutral aspect or a lack of aspect. Every use of a Bi-aspectual verb like *likvidirovat*^{p/i} 'liquidate^{p/i}' is either Perfective or Imperfective, as disambiguated by context (Isačenko 1960: 143-44; Mučnik 1966: 61; Avilova 1968: 66; Galton 1976: 294; Gladney 1982: 202; Čertkova 1996: 100-109; Jászay 1999: 169; Zaliznjak and Šmelev 2000: 10), just as number is disambiguated when English *fish* is used in context. The one significant exception is Timberlake (2004: 407-9) who suggests that Bi-aspectual verbs are "anaspectual", and do not express aspect. Due to the prevailing assumption that Russian verbs come in "aspectual pairs" (see 2.0), most scholars consider Bi-aspectual verbs to be syncretic examples of "pairs" where the two verbs in each "pair" are homophonous. This means that Bi-aspectual verbs are deviant in their formal morphological marking of aspect, but not in their semantic expression of this linguistic category.

Bi-aspectual verbs (both foreign and native) display a range of somewhat unusual phenomena, most of which can be stated as constraints on their paradigmatic, syntactic, and semantic expression of aspect. Although most forms in the paradigm of Bi-aspectual verbs can express both Perfective and Imperfective, some forms are of necessity monoaspectual, namely

the periphrastic future (*budu likvidirovatⁱ* ‘I will be liquidatingⁱ’) and the various participles and gerunds (*likvidirujuščijⁱ* ‘that which is liquidatingⁱ’, *likvidiruemyjⁱ* ‘that which is being liquidatedⁱ’, *likvidirujaⁱ* ‘while liquidatingⁱ’, *likvidirovavšij^p* ‘that which had liquidated^p’, *likvidirovannyj^p* ‘that which was liquidated^p’ and *likvidirovav^p* ‘having liquidated^p’; cf. Mučnik 1966: 61). The non-past forms can express both aspects and both present and future tense, but only in two combinations, either as future Perfective (*likvidiruju^p* ‘I will liquidate^p’) or as present Imperfective (*likvidirujuⁱ* ‘I am liquidatingⁱ’). Many Bi-aspectual verbs show a strong tendency to express only Perfective aspect in past tense forms (Zaliznjak and Šmelev 2000: 75). Some Bi-aspectuals cannot be used in the following syntactic contexts (which would normally permit Imperfective verbs): with phasal verbs (*načnu* + infinitiveⁱ ‘I will start X-ingⁱ’), with temporal adverbs like *dolgo* ‘for a long time’, *dva časa* ‘two hours’ in the past tense, and with modal verbs (*ne sleduet* + infinitiveⁱ ‘one shouldn’t Xⁱ’; cf. Čertkova and Čang 1998: 23). It is not uncommon for a verb to be Bi-aspectual in only one meaning, but “paired” in all other meanings; for example, Čertkova and Čang (1998: 27) note that *restavrirovat^{i/p}* ‘restore^{i/p}’ functions both as a Bi-aspectual and as a simplex Imperfective (with the Perfective *otrestavrirovat^p*) in concrete meanings, but only as a Bi-aspectual in metaphorical meanings. Although such constraints involve all types of Bi-aspectual verbs, the “native” Russian Bi-aspectuals seem particularly vulnerable (Zaliznjak and Šmelev 2000: 72-75). Overall, this means that Bi-aspectual verbs do not typically show the full range of options that we would expect from an Imperfective verb and its corresponding Perfective(s).

There is an overall tendency to eliminate Bi-aspectuality by integrating both foreign and native verbs into the system of Russian aspectual morphology (Isačenko 1960: 146-48; Mučnik 1966; Avilova 1968; Gladney 1982: 212; Čertkova and Čang 1998; Zaliznjak and Šmelev 2000: 75). This can happen either by: a) designating the simplex verb as an Imperfective and accepting a prefixed form as the Perfective correlate; or b) by designating the simplex verb as a Perfective and accepting a suffixed form as the Imperfective correlate. For example, *analizovatⁱ* ‘analyzeⁱ’ is now Imperfective and only the prefixed *proanalizovat^p* is acceptable in Perfective contexts, whereas *arestovat^p* ‘arrest^p’ is now a simplex Perfective, and *arestovyvatⁱ* is required in Imperfective contexts (Jászay 1999: 170, 172).

The first solution, that of recognizing the borrowed verb as a simplex Imperfective that can have prefixed Perfectives, is by far the most common, and there are probably two reasons for this. One is that this pattern conforms best to the prototypical use of Russian aspectual morphology

(Timberlake's 2004: 401-7 "tripartite system", mentioned above). The other reason for favoring the recognition of foreign verbs as simplex Imperfectives is that there are strong morphological constraints on the suffixation of unprefixated verbs with the *-ova-* suffix. Imperfectivization through suffixation in *-yva-/iva-* is only possible when the stress falls on the *-a-* vowel of the *-ova-* suffix, and only about 15% of foreign Bi-aspectual verbs have that stress. The remainder (and this includes nearly all verbs with the extended versions of the *-ova-* suffix) are ineligible to be integrated into the aspectual system by means of suffixation (Mučnik 1966; Avilova 1968; Jászay 1999). The historical trend toward elimination of Bi-aspectuality is not perfectly uniform (Mučnik 1966: 65 notes that some foreign verbs were "paired" in previous centuries but are now Bi-aspectual), nor is its rate (which is definitely slower for the relic, native Bi-aspectual verbs, and can differ widely among foreign verbs, cf. Zaliznjak and Šmelev 2000; Jászay 1999). The outcome of this process is also variable. Sometimes the acquisition of aspectual morphology is claimed to eliminate Bi-aspectuality, and in other instances morphologically marked forms coexist with their Bi-aspectual equivalents (Avilova 1968; Čertkova and Čang 1998).

Here is a summary of what is known about borrowed and Bi-aspectual verbs in Russian: They share the *-ova-* suffix (plus extensions), which limits their integration as Perfective simplex verbs, favoring instead their recognition as simplex Imperfectives. We know relatively little about the numbers and aspectual profiles of non-Bi-aspectual borrowed verbs, and their status has not been compared to that of the Bi-aspectual borrowed verbs. Though we know more about the numbers and status of Bi-aspectual borrowed verbs, much of that information is hard to assess due to conflicting claims concerning various issues, such as how many and which verbs are Bi-aspectual in which forms. We do know that most Bi-aspectual verbs are borrowed, that they unambiguously express aspect in context, that this semantic expression of aspect is gradually being formally supported by the acquisition of aspectual morphology, mostly in the form of prefixed Perfectives. We also know that there are various constraints on Bi-aspectuality.

What we don't know is how the numbers and status of borrowed Bi-aspectual verbs compare with the numbers and status of non-Bi-aspectual borrowed verbs. There seems to be an implicit assumption that all (or virtually all) borrowed verbs are Bi-aspectual (cf. the quote from Avilova above), and that if there are other borrowed verbs, they aren't interesting. The empirical study in section 5.0 will address these issues, and will show

that the comparison between Bi-aspectual and non-Bi-aspectual borrowed verbs is actually revealing, for it indicates that semantic factors may be strong predictors of the aspectual status of borrowed verbs. Before undertaking this comparison, however, it is necessary to examine the semantics of aspect in Russian in more detail, focusing on issues of particular relevance for Bi-aspectual and Imperfective verbs. This is the topic of section 4.0.

4. Implications of the cluster model for borrowed and Bi-aspectual verbs

This section will present an alternative to the “aspectual pair” model that is based on metaphorical motivations for aspectual behavior in Russian. This alternative model, the cluster model, highlights the differences between Bi-aspectual and Imperfective simplex verbs on the basis of both semantic content and morphological behavior.

Given the predominance of the “aspectual pair” model in general (cited in 2.0), as well as the fact that Bi-aspectual verbs are assumed to be syncretic “aspectual pairs” (cited in 3.0), it is necessary to examine the concept of the “aspectual pair” in some detail. On the basis of a large, stratified sample representing the full range of the Russian verbal lexicon (Janda forthcoming a), I have advanced the cluster model of Russian verbal aspect. This model acknowledges the existence of the aspectual partnerships traditionally labeled “pairs”, but at the same time recognizes that these partnerships are usually embedded in larger clusters of aspectually related verbs. On the motivation of three metaphors, the Russian aspectual system differentiates Imperfectives from not one, but four distinct types of Perfective verbs in Russian, each of which has a specific semantic and morphological profile. I will look first at the three metaphors and then at the four types of Perfective verbs.

The three metaphors that govern the Russian aspect system compare the temporal contours of events to the behavior of concrete objects in three source domains involving physical matter, motion, and granularity. The second of these metaphors, the one comparing events to motion, will prove most important in the analysis of borrowed and Bi-aspectual verbs. The metaphors (in keeping with traditions of cognitive linguistics, cf. Lakoff 1987) will be stated in capital letters:

1) A PERFECTIVE EVENT IS A SOLID OBJECT, AN IMPERFECTIVE EVENT IS A FLUID SUBSTANCE. This metaphor distinguishes

Perfective from Imperfective aspect in Russian, on the basis of fourteen parameters that show isomorphism between properties of matter and uses of aspect, as explained in detail in Janda 2004 (cf. also Mehlig 1994 and 1997). This metaphor will not be discussed further here.

2) A COMPLETABLE ACTION IS TRAVEL TO A DESTINATION. This metaphor distinguishes Completable and Non-Completable actions. Motion can involve either travel to a destination, as in Russian *idti*ⁱ ‘walkⁱ (toward a destination)’, or motion in random or multiple directions, as in Russian *xodit*ⁱ ‘walkⁱ (without a unitary destination)’. Metaphorically any Completable goal-directed action, like *pisat*ⁱ *dissertaciju* ‘writeⁱ (one’s) dissertation’ is a bit like a trip to a destination (here, the last page of the dissertation). At all times when you are writing your dissertation you are making progress, and when you reach the end, you are done. A Non-Completable action is more diffuse, lacking a unitary goal, like *rabotat*ⁱ *v kabinete* ‘workⁱ in (one’s) office’. You don’t actually finish working, you just work until it is time to go home and then do it some more the next day. In addition to distinguishing the two types of motion verbs in Russian, Completeness distinguishes three types of Perfective verbs, the Natural Perfective, Specialized Perfective, and Complex Act Perfective, as detailed below.

3) A SINGLE CYCLE OF A REPEATED ACTION IS A SINGLE GRAIN OF SAND. This metaphor distinguishes Singularizable actions from actions that are not Singularizable, by comparing actions to sand. If the action, like sand, has single identical grains, then the action can be Singularized. An example is *ščipat*ⁱ ‘pinch/pluckⁱ’, which refers to pinching or plucking in general, from which a single pinch or pluck can be extracted. Singularizability distinguishes the fourth type of Perfective verb, the Single Act Perfective.

Metaphor 2) makes several crucial distinctions among Perfective verbs. Three types of Perfectives are motivated by this metaphor: 1) Natural Perfective (the logical conclusion of an activity), 2) Specialized Perfective (a specialized conclusion of the activity), and 3) Complex Act Perfective (a combination of activity and external boundaries). These three Perfectives are associated with different construals of Completeness. If an activity can be construed as Completable, it can have a Natural Perfective. If an activity can be construed as Completable if it is performed in a specialized way, it can have a Specialized Perfective. And if an activity can be construed as Non-Completable, it can have a Complex Act Perfective. Examples of these construals and Perfectives appear below.

Most simplex Imperfective verbs in Russian are ambiguous for Completability and can be construed either way depending upon context. The verb *pisat*ⁱ ‘writeⁱ’ is construable as either Completable, as in *Sestra pišetⁱ dissertaciju* ‘(My) sister is writingⁱ (her) dissertation’, or as Non-Completable, as in *Sestra pišetⁱ naučnuju fantastiku* ‘(My) sister writesⁱ science fiction/is a science fiction writer’. In the latter example the aspectual function of *pisat*ⁱ ‘writeⁱ’ is comparable to that of *rabotat*ⁱ ‘workⁱ’. If a verb can be construed as Completable, then it can have a Natural Perfective which describes the logical completion of the activity. Thus *pisat*ⁱ ‘writeⁱ’ has the Natural Perfective *napisat*^p ‘write^p’. Although *rabotat*ⁱ ‘workⁱ’ cannot be construed as Completable and lacks a Natural Perfective, if further semantic content is added, a specialized Completable meaning can arise, as in the Specialized Perfective *pererabotat*^p ‘re-do, revise^p’. This is possible for some, but not all Non-Completable verbs. *Skripet*ⁱ ‘squeakⁱ’, for example, is exclusively Non-Completable and lacks both Natural and Specialized Perfectives.

Only verbs with a Non-Completable construal can form Complex Act Perfectives (also known as Aktionsarten or actionality, cf. Bertinetto and Delfitto 2000; Tatevosov 2002) which combine the activity described by the Imperfective with external boundaries. The best example of this in Russian is the *po-* prefixed delimitative, as in *popisat*^p ‘write^p (for a while)’, *porabotat*^p ‘work^p (for a while)’, *poskripet*^p ‘squeak^p (for a while)’. A verb that lacks a Non-Completable construal cannot have a Complex Act Perfective. For example, *krepnut*ⁱ ‘get strongerⁱ’ is inexorably Completable; one cannot engage in the activity of getting stronger without making progress and actually getting stronger. A verb like *krepnut*ⁱ ‘get strongerⁱ’ cannot form a Complex Act Perfective.

For the remainder of this article, the most important distinction here is between verbs that do have a Non-Completable construal (like *pisat*ⁱ ‘writeⁱ’, *rabotat*ⁱ ‘workⁱ’, and *skripet*ⁱ ‘squeakⁱ’) and verbs that do not have a Non-Completable construal (like *krepnut*ⁱ ‘get strongerⁱ’). I will argue that typical borrowed Imperfective verbs are like most native Russian Imperfectives: they have a Non-Completable construal and can form Complex Act Perfectives. However, typical borrowed Bi-aspectual verbs lack a Non-Completable and hence also lack Complex Act Perfectives.

The fourth type of Perfective, the Single Act Perfective, is motivated by Metaphor 3 and is available only to verbs that form Complex Act Perfectives. If an activity is construable as both Non-Completable and Singularizable, a Single Act Perfective can be formed, as in *skripnut*^p ‘squeak^p (once)’ and *ščipnut*^p ‘pinch/pluck^p (once)’. The verb *ščipat*ⁱ ‘pinch/pluckⁱ’

also has all the other types of Perfectives, namely the Natural Perfective *obščipat^p* ‘pluck^p’, Specialized Perfectives such as *vyščipat^p* ‘pluck out^p’, and Complex Act Perfectives such as *poščipat^p* ‘pinch/pluck^p (for a while)’. Thus *ščipatⁱ* ‘pinch/pluckⁱ’ illustrates the maximal cluster type with all four types of Perfectives. This and all other cluster structures attested in Russian conform to the following implicational hierarchy (items to the left of the “>” are included in a cluster prior to items on the right, and items in parentheses are optional and unordered):

Imperfective > (Natural Perfective/Specialized Perfective) > Complex Act
> Single Act

This implicational hierarchy was originally proposed on the basis of a study (Janda forthcoming a) that did not specifically target borrowed and Bi-aspectual verbs, but at the same time did not exclude them. That study included eighteen borrowed verbs, seven of which serve as simplex Imperfectives, and eleven of which are Bi-aspectual. The seven borrowed Imperfectives behave much like any other Imperfectives. Collectively they represent five different cluster structures, which include various combinations of all four types of Perfectives. In other words, the borrowed Imperfectives are unremarkable. The eleven Bi-aspectual verbs (nine of which are borrowed and two of which are native) are on the contrary conspicuous for their inability to have Complex Act and Single Act Perfectives in their clusters. The Bi-aspectual verbs form only two types of clusters: Imperfective + Natural Perfective and Imperfective + Natural Perfective + Specialized Perfective. In both cluster types the Imperfective and Natural Perfective are syncretic, although for some verbs there are alternative prefixed Natural Perfectives. Thus, for example, the verb *annulirovat^{p/i}* ‘annul^{p/i}’ serves as both Imperfective and Natural Perfective in its cluster, but *klassificirovat^{p/i}* ‘classify^{p/i}’ has in addition the alternative Natural Perfective *rasklassificirovat^p*. In other words, whereas Imperfective borrowed verbs seem unremarkable in their cluster structure, Bi-aspectual borrowed verbs have a very limited repertoire of cluster structures.

The cluster model suggests a link between semantic content and cluster structure. According to this model, only a verb that can be construed as Non-Completable can have a Complex Act Perfective, and only verbs that have a Complex Act Perfective are eligible to form a Single Act Perfective. Borrowed Imperfectives seem to form Complex Act Perfectives at a rate comparable to that of other Imperfectives. The cluster structure displayed by Bi-aspectual verbs indicates that they cannot be construed as Non-

Completable, and this is correlated with a lack of Complex Act (and by necessity also Single Act) Perfectives. Given the paucity of data on borrowed verbs in the original study, this correlation can only be stated as a hypothesis, and this hypothesis will be tested empirically in 5.0.

5. Empirical study of borrowed and biaspectual verbs in Russian

The cluster model offers us a metric by which Bi-aspectual and non-Bi-aspectual borrowed verbs can be meaningfully compared, namely the formation of Complex Act Perfectives. This section will present an empirical study of borrowed verbs and analyze its results. In any empirical study, a number of practical decisions have to be made, some of which have consequences for the data. Every attempt will be made to describe these decisions and their effects in this section. Despite unavoidable imperfections, the data provide compelling evidence that borrowed Bi-aspectual and non-Bi-aspectual (Imperfective) verbs have very different profiles, both in terms of their participation in derivational morphology and in terms of their semantics.

The first task was to assemble a list of borrowed verbs, classified as Bi-aspectual as opposed to non-Bi-aspectual. The goal was to have a list of manageable size with clear classifications. Because dictionaries differ in their identification of Bi-aspectual verbs (see section 3.0), it was decided to initially cull verbs and classifications only from one dictionary to reduce “noise” in the data (and on the assumption that any single dictionary should be reasonably consistent). Wheeler 1972/1992 was selected for this purpose because it is a modest, but fairly comprehensive dictionary, and because it lists just one option (Bi-aspectual or Imperfective) for each entry of a foreign verb. Because the use of search engines would later make it impossible to automatically differentiate between reflexive (*-sja*) and non-reflexive forms of verbs, all reflexive verbs are counted together with any non-reflexive verb as a single verb. Thus *rekomedovat' /sja*^{p/i} ‘recommend/be recommended^{p/i}’ counts as a single verb in this study. This made it impossible for us to detect differences in the behavior of non-reflexive and reflexive verbs. However, verbs of this type (with both reflexive and non-reflexive forms) constitute only 6% of our data, so the presence of such verbs should not have a significant effect on the data, nor were there enough such verbs to determine whether their behavior was actually different. It was also impossible for us to disambiguate verbs that had two entries, such as *massirovat*^{p/i} which is listed as both ‘amass^{p/i}’ and ‘mas-

sage^{pi}. There were only three such verbs in the entire data set (two among the Bi-aspectuals and one among the non-Bi-aspectuals), constituting only 0.5% of the database. These three verbs were each treated as if they were a single entry, despite multiple meanings. There was one verb (or group of verbs) that had to be excluded from the study altogether due to the fact that the differentiation between reflexive and non-reflexive uses as well as different meanings associated with different stress made it impossible to classify it as either Bi-aspectual or non-Bi-aspectual in such a way that it could be distinguished by search engines: *pikirovat* /*sja*. This verb is Bi-aspectual when it is not reflexive, and has two meanings: ‘dive, swoop’ (aeronautical) when stressed on the second syllable; ‘thin out’ (agricultural) when stressed on the last syllable. When reflexive, this verb is Imperfective only and means ‘exchange caustic remarks, cross swords’. Disambiguation of these uses proved to be impossible given the remaining design of the study. There was also one unprefixated Perfective foreign verb, *atakovat*^p ‘attack^p’, which was not included in the study because it could not be classified as either Bi-aspectual or non-Bi-aspectual.

555 relevant foreign verbs were culled from Wheeler 1972/1992, 349 (63%) of which were designated by that source as Bi-aspectual, and 206 (37%) of which were designated as Imperfective. These numbers alone make a compelling case for comparing borrowed Bi-aspectual and non-Bi-aspectual verbs, since if nearly 40% of the borrowed verbs are non-Bi-aspectual, then one cannot assume that all (or nearly all) borrowed verbs are Bi-aspectual. At this point I have established that Russian has at least two types of borrowed verbs and they are attested in roughly similar numbers. This fact begs the question of why some borrowed verbs are Bi-aspectual whereas others are not. It should also be noted that these figures probably underreport the rate of non-Bi-aspectual verbs, since scholars (cited in 3.0) frequently comment that dictionaries list verbs that are no longer Bi-aspectual as Bi-aspectual. It is likely therefore that some of the items classified in our list as Bi-aspectual are actually Imperfective.

The hypothesis from 4.0 is that one should expect a strong tendency for the Imperfective borrowed verbs to form Complex Act Perfectives, whereas these Perfectives should be rare or non-existent for the Bi-aspectual borrowed verbs. To test this hypothesis I needed to document the use of Complex Act Perfectives for all verbs in the study. Because the most common prefix found with Complex Act Perfectives is *po-*, it was decided that these forms would be searched (in Janda forthcoming a, only one verb was found that formed a Complex Act Perfective with a prefix other than *po-* in the absence of any *po-* form). Searching for *po-* forms of course

1. What Makes Russian Bi-aspectual Verbs Special 97

carried with it the liability that in addition to Complex Act Perfectives I would collect *po-* Natural Perfectives. Descriptions in the literature indicate that the vast majority of *po-* forms associated with borrowed Bi-Aspectuals would not be Natural Perfectives. For example, Avilova (1968: 67) lists *po-* among the prefixes used least frequently in prefixed Natural Perfectives of borrowed Bi-aspectual verbs (she ranks *po-* eighth in a list of ten prefixes used by these verbs). Overall use of *po-* to form Natural Perfectives in Russian is very high (cf. Dickey 2006: 3; Čertkova 1996), so it was expected that confounding data would be located particularly among the borrowed Imperfectives. To control this, examples of uses of *po-* forms were manually checked and verified for the presence of delimitative meaning (signaled by adverbials such as *nekotoroe vremja* ‘for a while’). When *po-* forms were found, it was nearly always possible to verify the meaning in at least some of the “hits” as delimitative.

Searches of the verbs were performed on www.yandex.ru in June 2006, and data was collected on the number of hits turned up for each verb both without a *po-* prefix and with a *po-* prefix. Table 1 gives basic data on the numbers gathered in this study. Of course data collected on a search engine is notorious for being unstable and unreliable. However, given the low frequencies of many of the verbs involved, it was impossible to collect sufficient data for all but a handful of these verbs from corpora, so a search engine was the only option.

The most striking observation to be made in Table 1 is that the average number of hits for *po-* prefixed verbs is more than five times higher for the Imperfective borrowed verbs than that for the Bi-aspectual borrowed verbs. This can be restated as the proportion of *po-* prefixed forms, which is 2.52% for Bi-aspectual verbs and 12.67% for Imperfective verbs. A logistic regression model using Pearson’s statistic to adjust for hit rate heterogeneity among verbs – this is needed as a different number of examples was collected for each verb and the probability that a verb will be prefixed with *po-* differs even for verbs that belong to the same class – reveals that there is a demonstrable positive correlation between Imperfective borrowed verbs and the presence of *po-* prefixed forms [$\chi^2= 107.37$, $df=1$, $p<.0001$].

Table 1: Unprefixed and *po-* prefixed Bi-aspectual and Imperfective borrowed verbs

	Bi-aspectual borrowed verbs		Imperfective borrowed verbs	
	unprefixed	<i>po-</i> prefixed	unprefixed	<i>po-</i> prefixed
Average # hits	1,903	51	1,973	265
Maximum # hits	77,799	2,444	25,784	1,697
Minimum # hits	19	0	20	0

The two types of verbs give very different data, with the Bi-aspectual verbs yielding obvious differences at the low end of the scale and the Imperfectives yielding interesting numbers at the high end of the scale. Whereas only 10% of Imperfective verbs yield zero *po-* forms, the absence of *po-* forms is more than three and a half times as frequent (36%) for Bi-aspectual verbs. The presence of small numbers (≤ 25) of *po-* forms is very common for Bi-aspectual verbs (44%), but thereafter it drops precipitously and high numbers of *po-* forms are vanishingly rare. 35% of Imperfective verbs also yielded low numbers of *po-* forms (≤ 25), but this may have been due in part to the presence of many verbs with very low overall frequency in this group (an effect corrected for in the discussion of Table 2 below). At the other end of the scale, verbs listed as Imperfective were ten times more likely (20%) to provide over 500 “hits” for *po-* forms than Bi-aspectual verbs (with only 2% of verbs having over 500 *po-* “hits”). 80% of Bi-aspectual verbs have 0-25 *po-* form attestations, but 54% of Imperfective verbs have 26 or more *po-* form attestations. At the low end of the scale, cutting the scale of *po-* attestations between 0-to-5 and 6-and-up, there is an even more revealing result. 63% of Bi-aspectual verbs have between zero and 5 *po-* form attestations, whereas 67% of Imperfective verbs have 6 or more *po-* form attestations. The two types of verbs, borrowed Bi-aspectuals and borrowed Imperfectives, thus behave as mirror images of each other in terms of their tendency to create *po-* prefixed Complex Act Perfectives.

As mentioned above, there are some very low frequency verbs in the data, particularly as pertains to Imperfective verbs that have only a few *po-* attestations. For example, *brasovat*ⁱ ‘braceⁱ’ yields only 38 unprefixed “hits” and 5 *po-* prefixed “hits”. In general, it is hard to say how much

1. *What Makes Russian Bi-aspectual Verbs Special* 99

small numbers (or small differences in numbers) of “hits” might mean on a search engine, since they can result from typos or reduplicated returns. And it is hard to say how significant effects are when dealing with low-frequency verbs. In order to correct for these problems, the focus was narrowed to verbs that are robustly attested by the search engine, namely verbs with over 1000 “hits”. All of these verbs are well-established in Russian and should be familiar to any native speaker. To compensate for the vagaries of search-engine data, I looked only at the extremes of the scale for verbs that have over 1000 attestations in order to show the largest possible differences. Table 2 lists all the high-frequency verbs found with either zero or over 1000 *po-* form attestations.

Table 2: High-frequency Bi-aspectual and Imperfective verbs with with either zero or over 1000 *po-* prefixed hits

Bi-aspectual verbs with over 1000 unprefix hits		
Zero <i>po-</i> prefixed hits: 70		Over 1000 <i>po-</i> prefixed hits: 3
<i>abonirovat’/sja</i> ‘subscribe’	<i>inkrustirovat’</i> ‘encrust’	<i>massirovat’</i> ‘amass; massage’
<i>angažirovat’</i> ‘book, engage’	<i>intensificirovat’</i> ‘intensify’	<i>rekomentovat’/sj a</i> ‘recommend’
<i>anglizirovat’</i> ‘anglicize’	<i>internacionalizirovat’</i> ‘internationalize’	<i>remontirovat’</i> ‘renovate’
<i>assignovat’</i> ‘allocate, budget’	<i>internirovat’</i> ‘place in internment’	
<i>debetovat’</i> ‘debit, charge’	<i>kanonizirovat’</i> ‘canonize’	
<i>deblokirovat’</i> ‘unblock’	<i>kanonizovat’</i> ‘canonize’	
<i>decentralizovat’</i> ‘decentralize’	<i>kapitalizirovat’</i> ‘reinvest’	
<i>dekretirovat’</i> ‘decree’	<i>kollektivizirovat’</i> ‘collectivize’	
<i>demaskirovat’</i> ‘unmask’	<i>kolonizovat’</i> ‘colonize’	
<i>demilitarizovat’</i> ‘demilitarize’	<i>kristallizovat’/sja</i> ‘crystallize’	
<i>demobilizovat’</i> ‘demobilize’	<i>kvalificirovat’</i> ‘qualify, test’	
<i>denacionalizirovat’</i>	<i>latinizirovat’</i> ‘latinize’	

'privatize'	<i>denaturirovat</i> 'denature'	<i>litografirovat</i> 'lithograph'
<i>denonsirovat</i> 'denounce'	<i>dešifrirovat</i> 'decipher'	<i>meblirovat</i> 'furnish, upholster'
<i>detalizovat</i> 'work out in detail'	<i>dezavuirovat</i> 'disavow'	<i>metallizirovat</i> 'apply metal coating'
<i>dezertirovat</i> 'desert'	<i>dezorganizovat</i> 'disorganize'	<i>militarizovat</i> 'militarize'
<i>dezentirovat</i> 'sj 'disorient'	<i>dešelonirovat</i> 'echelon, designate'	<i>monopolizirovat</i> 'monopolize'
<i>evropeizirovat</i> 'europeanize'	<i>flankirovat</i> 'flank'	<i>njuansirovat</i> 'supply nuances'
<i>frakcionirovat</i> 'sort, fractionate'	<i>germanizirovat</i> 'germanize'	<i>orkestruvat</i> 'orchestrate'
<i>gil'otinirovat</i> 'guillotine'	<i>gradirovat</i> 'boil out of saline'	<i>ornamentirovat</i> 'ornament'
<i>gofrirovat</i> 'crimp'	<i>granulirovat</i> 'granulate'	<i>personificirovat</i> 'personify'
<i>gummirovat</i> 'coat with rubber'	<i>immunizirovat</i> 'immunize'	<i>plakirovat</i> 'plate, coat'
<i>individualizirovat</i> 'individualize'		<i>radioficirovat</i> 'equip with a radio'
		<i>ratificirovat</i> 'ratify'
		<i>reducirovat</i> 'reduce'
		<i>repatriirovat</i> 'sj 'repatriate'
		<i>satinirovat</i> 'glaze, polish'
		<i>servirovat</i> 'serve, dish up'
		<i>sindicirovat</i> 'syndicate'
		<i>skandalizirovat</i> 'scandalize'
		<i>tamponirovat</i> 'plug'
		<i>temperirovat</i> 'temper'

1. *What Makes Russian Bi-aspectual Verbs Special* 101

<i>indossirovat</i> ‘endorse’	<i>terrasirovat</i> ‘terrace’	
<i>inkorporirovat</i> ‘incorporate’	<i>vulkanizirovat</i> ‘vulcanize’	
<i>inkriminirovat</i> ‘incriminate’	<i>vulkanizovat</i> ‘vulcanize’	
Imperfective verbs with over 1000 unprefix hits		
Zero <i>po-</i> prefixed hits: 5		
<i>fetišizirovat</i> ‘fetishize’	<i>aplodirovat</i> ‘applaud’	<i>manipulirovat</i> ‘manipulate’
<i>fraxtovat</i> ‘freight’	<i>buksovat</i> ‘skid’	<i>marinovat</i> ‘marinate’
<i>legirovat</i> ‘alloy’	<i>eksperimentirovat</i> ‘experiment’	<i>masturbirovat</i> ‘masturbate’
<i>vualirovat</i> ‘veil’	<i>ekspluatirovat</i> ‘exploit’	<i>praktikovat</i> / <i>sja</i> ‘practice’
<i>erodirovat</i> ‘erode’	<i>fantazirovat</i> ‘fantasize’	<i>psixovat</i> ‘act flaky’
	<i>fextovat</i> ‘fence’	<i>redaktirovat</i> ‘edit’
	<i>flirtovat</i> ‘flirt’	<i>regulirovat</i> ‘regulate’
	<i>improvizirovat</i> ‘improvise’	<i>šantažirovat</i> ‘blackmail’
	<i>interesovat</i> / <i>sja</i> ‘interest’	<i>šinkovat</i> ‘chop’
	<i>intrigovat</i> ‘scheme’	<i>spekulirovat</i> ‘speculate, gamble’
	<i>ironizirovat</i> ‘mock’	<i>tancevat</i> ‘dance’
	<i>komandovat</i> ‘be in charge’	<i>trenirovat</i> ‘train’
	<i>kritikovat</i> ‘criticize’	<i>žonglirovat</i> ‘juggle’
Over 1000 <i>po-</i> prefixed hits: 26		

Again there is a difference between the Bi-aspectual and Imperfective borrowed verbs in Russian. Looking only at well-attested (over 1000 “hits”) verbs, among Bi-aspectuals, 70 verbs yield zero *po-* forms, whereas only 3 verbs have over 1000 *po-* forms. Among robustly attested Imperfective verbs there is the opposite pattern: whereas only 5 verbs yield zero *po-* forms, 26 verbs return over 1000 *po-* form “hits”. Given this data, I would like to argue that a prototypical Bi-aspectual borrowed verb lacks Complex

Act (and therefore Single Act) Perfectives, whereas Complex Act Perfectives are commonly found among Imperfective borrowed verbs. More concretely, a typical Bi-aspectual verb like *dezertirovat*^{p/i} ‘desert^{p/i}’ cannot form a Complex Act Perfective; there is NO **podezertirovat*^p *‘desert^p (for a while)’. But a typical Imperfective borrowed verb like *flirtovat*ⁱ ‘flirtⁱ’ can form a Complex Act Perfective; *poflirtovat*^p ‘flirt^p (for a while)’ exists and is well-attested.

It would not be possible to discuss all 555 borrowed verbs in this survey, but Table 2 provides us with an opportunity to look more closely at a more manageable (and probably more representative, due to the fact that all these items are high-frequency, familiar verbs) fraction of the data. The high-frequency Bi-aspectual verbs in the left column do not form Complex Act Perfectives. It is fairly easy to see how this is motivated by the meanings of these verbs. These Bi-aspectual verbs for the most part describe actions that one cannot engage in without having an effect and/or making progress toward a goal. One can’t just do these things for a while and stop and have no result. These activities are strongly telic. For example, one can’t spend some time guillotining (*gil’otirovat*^{p/i}) or immunizing (*immunizirovat*^{p/i}) without having guillotined or immunized someone. There are several discernable, yet overlapping, groups of verbs here, most of which are transitive and all of which involve a goal-directed change:

Table 3: Semantic groupings of high-frequency Bi-aspectual verbs

Meanings	High-frequency verbs
Covering a surface	<i>gummirovat</i> ^{p/i} ‘coat with rubber ^{p/i} ’, <i>meblirovat</i> ^{p/i} ‘upholster ^{p/i} ’, <i>metallizirovat</i> ^{p/i} ‘coat with metal ^{p/i} ’, <i>ornamentirovat</i> ^{p/i} ‘ornament ^{p/i} ’, <i>plakirovat</i> ^{p/i} ‘plate ^{p/i} ’, <i>satirovat</i> ^{p/i} ‘polish ^{p/i} ’
Removal	<i>demaskirovat</i> ^{p/i} ‘unmask ^{p/i} ’, <i>deblokirovat</i> ^{p/i} ‘unblock ^{p/i} ’, <i>demilitarizirovat</i> ^{p/i} ‘demilitarize ^{p/i} ’, <i>demobilizirovat</i> ^{p/i} ‘demobilize ^{p/i} ’, <i>denacionalizirovat</i> ^{p/i} ‘privatize ^{p/i} ’, <i>dezertirovat</i> ^{p/i} ‘desert ^{p/i} ’
Physical change of state	<i>denaturirovat</i> ^{p/i} ‘denature ^{p/i} ’, <i>gofrirovat</i> ^{p/i} ‘crimp ^{p/i} ’, <i>granulirovat</i> ^{p/i} ‘granulate ^{p/i} ’, <i>kristalizovat</i> ^{p/i} ‘sja ^{p/i} ’ ‘crystallize ^{p/i} ’, <i>temperirovat</i> ^{p/i} ‘temper ^{p/i} ’, <i>vulkaniz(ir)ovat</i> ^{p/i} ‘vulcanize ^{p/i} ’
Cultural/Linguistic change	<i>anglizirovat</i> ^{p/i} ‘anglicize ^{p/i} ’, <i>evropeizirovat</i> ^{p/i}

1. *What Makes Russian Bi-aspectual Verbs Special* 103

of state	‘europeanize ^{p/i} ’, <i>germanizirovat</i> ^{p/i} ‘germanify ^{p/i} ’, <i>internacionalizirovat</i> ^{p/i} ‘internationalize ^{p/i} ’, <i>latinizirovat</i> ^{p/i} ‘latinize ^{p/i} ’, <i>dešifrirovat</i> ^{p/i} ‘decipher ^{p/i} ’
Arrangement/Organization	<i>decentralizovat</i> ^{p/i} ‘decentralize ^{p/i} ’, <i>dezorganizovat</i> ^{p/i} ‘disorganize ^{p/i} ’, <i>ešelonirovat</i> ^{p/i} ‘echelon ^{p/i} ’, <i>flankirovat</i> ^{p/i} ‘flank ^{p/i} ’, <i>frakcionirovat</i> ^{p/i} ‘fractionate ^{p/i} ’, <i>kollektivizirovat</i> ^{p/i} ‘collectivize ^{p/i} ’
Budgetary arrangement	<i>assignovat</i> ^{p/i} ‘allocate ^{p/i} ’, <i>debetovat</i> ^{p/i} ‘debit ^{p/i} ’, <i>kapitalizirovat</i> ^{p/i} ‘reinvest ^{p/i} ’, <i>monopolizirovat</i> ^{p/i} ‘monopolize ^{p/i} ’
Proclamation	<i>dekretirovat</i> ^{p/i} ‘decree ^{p/i} ’, <i>denonsirovat</i> ^{p/i} ‘denounce ^{p/i} ’, <i>dezavuairovat</i> ^{p/i} ‘disavow ^{p/i} ’, <i>indossirovat</i> ^{p/i} ‘endorse ^{p/i} ’, <i>inkriminirovat</i> ^{p/i} ‘incriminate ^{p/i} ’, <i>kanon(iz)irovat</i> ^{p/i} ‘canonize ^{p/i} ’, <i>ratificirovat</i> ^{p/i} ‘ratify ^{p/i} ’

Getting something covered, removed, changed, or arranged – all these are good examples of the metaphor A COMPLETABLE ACTION IS TRAVEL TO A DESTINATION. It is hard (perhaps impossible) to construe these actions as Non-Completable. The lexical semantics of these verbs gives them an aspectual profile that excludes the formation of Complex Act Perfectives, an effect which can be measured.

All three Bi-aspectual verbs in Table 1 with over 1000 *po-* forms raise suspicions. *Massirovat*^{p/i} has two meanings, ‘amass^{p/i}’ and ‘massage^{p/i}’. Although both meanings are listed as Bi-aspectual by Wheeler 1972/1992, the second one (which also appears to be vastly more numerous), is listed as an Imperfective in Ožegov 1949/1989. It was not possible to manually verify all attestations, but it appears that the *po-* forms of *massirovat*² are all (or nearly all) based on the ‘massage’ meaning, which is probably not Bi-aspectual (Ožegov 1949/1989 notes that the Bi-aspectual use is obsolete). Čertkova and Čang specifically cite *rekomentovat*’/’*sja*’ ‘recommendⁱ’ as an example of a verb that is erroneously entered in dictionaries as Bi-aspectual despite the fact that it is really an Imperfective. *Remontirovat*ⁱ ‘renovateⁱ’ is likewise listed by Ožegov 1949/1989 as an Imperfective.

Among the Imperfective verbs in Table 2, two are listed as Bi-aspectual by Ožegov 1949/1989: *legirovat*^{p/i} ‘alloy^{p/i}’, which yielded no *po-* forms, and *improvizirovat*^{p/i} ‘improvize^{p/i}’, which yielded over 1000 *po-* forms. The Imperfective verbs with over 1000 *po-* forms behave much

like typical native Russian simplex Imperfectives. In addition to readily forming Complex Act Perfectives, a number of them form other types of Perfectives in various combinations:

Natural Perfectives: *sfantazirovat*^p ‘fantasize^p’, *skomandovat*^p ‘give a command^p’, *zamarinovat*^p ‘marinate^p’, *otredaktirovat*^p ‘edit^p’, *uregulirovat*^p (also *ot-*, *za-*) ‘regulate^p’, *stancevat*^p ‘dance^p’, *natrenirovat*^p ‘train^p’

Specialized Perfectives: *podregulirovat*^p ‘adjust, reset^p’, *raskritikovat*^p ‘tear to pieces^p’, *vytancevat*^p ‘obtain by dancing^p’

Single Act Perfectives: *psixanut*^p ‘crack up^p (once)’ (from *psixovat*ⁱ ‘act flakyⁱ’), *spekul’nut*^p ‘gamble^p (once)’ (from *spekulirovat*ⁱ ‘gambleⁱ’)

Semantically the typical Imperfective verbs describe human behaviors associated with various social and professional settings. Most of these verbs can be used intransitively, and typically these are verbs that can be used in expressions like *on po-X-oval nemnogo i brosil* ‘he X-ed for a while and then stopped’, implying no result. The verbs in this group do not fit into the subtypes listed for typical Bi-Aspectual verbs above. On the contrary, these verbs are easily construable as Non-Completable.

The trends in this empirical study are strong and compelling enough to outweigh whatever shortcomings there may be in the data. Clearly the Imperfective and Bi-Aspectual borrowed verbs of Russian are very different groups of verbs, both objectively (quantified in attestations of Complex Act *po-* Perfectives), and subjectively (given the semantic groups of verbs observed). Brief conclusions follow in section 6.0.

6. Conclusions

Borrowed verbs in Russian exist as both Bi-Aspectual and Imperfective verbs. Both types of borrowed verbs are well-attested in Russian and each type has its own distinctive semantic and derivational profile. The borrowed Imperfective verbs behave much like other Imperfective verbs in Russian, and derive all four types of Perfectives. The borrowed Imperfectives show a strong tendency to derive Complex Act Perfectives, in particular delimitatives prefixed in *po-*. Semantically, the borrowed Imperfectives describe behaviors characteristic of people in various social settings. Most Russian Bi-Aspectual verbs are borrowed, and these verbs are restricted in their derivational morphology because they do not form Complex Act and Single Act Perfectives. They tend to refer to actions that are construable

only as Completable, involving changing the state or arrangement of something.

Given these facts, we can speculate on what role the lexical semantics of a borrowed verb likely play in determining whether a borrowed verb will be recognized as a Bi-aspectual or a more ordinary simplex Imperfective verb. Recall that when a foreign verb arrives in the Russian lexicon, it starts out with no aspectual morphology, nor any accompanying cluster of aspectually related verbs that might disambiguate its aspect. As a new immigrant to Russian, a pilgrim verb has only its lexical meaning at the outset. A critical test for a new verb is whether it can describe Completable and Non-Completable actions, as motivated by the metaphor: A COMPLETABLE ACTION IS TRAVEL TO A DESTINATION. Verbs with strongly telic meanings can only describe Completable actions. The fact that these verbs necessarily describe results (or progress toward results) makes it possible to use them in Perfective contexts even without Perfectivizing morphology. Such verbs are excellent candidates for Bi-aspectuality, although they may later acquire the morphology of the Russian aspectual system. Verbs that have a Non-Completable interpretation are appropriate in Imperfective contexts, and will usually require Perfectivizing morphology for Perfective use. Such verbs enter the lexicon as Imperfectives.

Notes

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- 1. Although nearly all scholars agree that Perfective is semantically marked in Russian, Galton 1976 gives the opposite assignment and Padučeva 1996 considers Perfective vs. Imperfective to be an equipollent rather than asymmetrical relationship.
- 2. Dahl (1985: 71-72) and Smith (1991: 277) point out this typological correlation concerning the markedness values of Perfective and Imperfective.
- 3. This list simplifies the picture a bit, citing only the affixes relevant to Bi-aspectual and foreign verbs. Švedova et. al. 1980 lists 17 Perfectivizing prefixes, but only the 11 given here are attested with Bi-aspectual verbs by Avilova (1968) and Čertkova and Čang (1998), and they are given in descend-

ing order of frequency. These prefixes are those common to both Bi-aspectual and non-Bi-aspectual verbs in Russian.

4. 85 of the 428 verbs listed as Imperfective only in Wheeler 1972/1992 have foreign origins. This figure includes 29 verbs other than those in the study described in 4.0, since it includes items with suffixes other than *-ovat'*, such as *špionit'^{si}* 'be a spy'¹ (which is not strictly a borrowed verb, but is built from a borrowed noun).

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