Why markedness is always local: the case of Russian aspect

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Résumés

| ENGLISH | FRANÇAIS |

La notion de marquage décrit une asymétrie codée dans laquelle un plus haut degré de complexité (en termes de forme et de sens) tend à être corrélé avec une fréquence plus basse. Étant donné que la notion de marquage s'intéresse aux relations forme-sens et aux tendances liées à l'usage de la langue, le marquage est intrinsèquement lié aux théories développées dans le cadre de la linguistique cognitive. On considère traditionnellement que le marquage des valeurs aspectuelles en russe opère ainsi: le perfectif serait marqué, à l'inverse de l'imperfectif qui ne le serait pas. Cependant, cette hypothèse est sujet à controverse et contredit des schémas remarqués dans d'autres langues. En outre, ni la complexité de forme, ni la fréquence d'usage dans un corpus ne soutient l'hypothèse traditionnelle au niveau de la catégorie. Nous irons au cœur des niveaux du lexème (des groupes de verbes définis par des schémas récurrents majeurs de la morphologie aspectuelle) et du sous-paradigme (temps) et nous trouverons plus de soutien pour la présence de marquage à ces niveaux. Alors qu'un groupe de verbes soutient l'hypothèse traditionnelle du perfectif marqué, deux autres groupes de verbes soutiennent l'inverse, où c'est l'imperfectif qui est marqué. Au niveau du sous-paradigme du temps, nous rencontrons un obstacle particulier en raison de facteurs confusionnels d'homonymie et de formes non-contigües. Aucune étude n'avait jusqu'à lors présenté une mesure précise de l'incidence des formes du futur en russe. Nous proposons de résoudre ce problème en examinant un groupe stratifié de verbes, en échantillonnant et marquant manuellement des formes, et en utilisant cet échantillon de donnée pour extrapoler une estimation raisonnable des formes futures. Nous trouvons que les formes perfectives du futur sont approximativement quatorze fois plus fréquentes que les formes imperfectives du futur. Les formes du futur en russe démontrent avec force que l'aspect imperfectif est marqué en raison du haut degré de complexité morphologique et d'une fréquence bien plus basse. Nous concluons qu'il fait plus sens d'évaluer les schémas de marquage au niveau local qu'au niveau catégoriel.

Entrées d'index

Mots-clés : marquage, russe, corpus, morphologie, aspect, encodage de l'asymétrie, temps du futur

Keywords: markedness, Russian, corpus, morphology, aspect, encoding asymmetry, future tense.

Plan

Texte intégral

1. Introduction

This article tackles the question of the markedness of perfective vs. imperfective aspect in Russian, an issue that has attracted considerable attention in the scholarly literature (see discussion and citations in Section 3). The prevailing assumption is that Russian is a language in which the markedness values for aspect are relevant at the category level and that perfective is marked whereas imperfective is unmarked, the reverse of what is observed for most other languages (Dahl 1985). However, we argue that looking for markedness at the category level of aspect is supported neither by the overt marking of morphology nor by corpus frequencies. Instead, we examine various local levels: lexemes grouped according to their type of aspectual marking, as well as tense, and find more convincing markedness patterns at these local levels. We also tackle the previously unsolved problem of accurately measuring the incidence of future tense in Russian, and present compelling evidence that within future tense, we must acknowledge perfective as unmarked and imperfective as marked. This finding stands in stark contrast to the traditional assumption.

Section 2 presents the theoretical connection of this research to markedness and to cognitive linguistics. We define both markedness and local markedness with respect to scholarly traditions. We identify three parameters that are relevant to the observation of markedness relations, and two of these parameters can be operationalized: morphological complexity and corpus frequency. In Section 3 we present Russian aspect, how it is signaled morphologically, and how this verbal category is traditionally interpreted with respect to markedness. Given the parameters of markedness, we find a lack of convincing evidence for the traditional interpretation. We proceed to investigate the markedness of aspect at the local level of three different groups of lexemes, defined by the three major morphological patterns of aspectually paired verbs: "A", "B", and "C". We furthermore examine markedness at the subparadigm level of past tense. We show that at all of these local levels, we find better evidence of markedness relations, though they point in different directions: "A" suggests that perfective is marked, while "B" and "C" suggest that imperfective is marked. Section 4 undertakes the task of measuring the frequency of perfective vs. imperfective future forms, and we find that at this local level, there is strong evidence that imperfective is marked. We summarize our findings in Section 5.

2. Markedness and cognitive linguistics

Markedness is a theoretically neutral descriptive concept that focuses on relationships between elements in categories (Battistella 1990: 5), a concept with a long history spanning linguistic traditions (Andersen 1989 and 2001, Prince and Smolensky 2008). When understood in scalar terms (Janda 1995), markedness is entirely compatible with cognitive linguistics (Lakoff 1987: 59-61, van Langendonck 1989: 180, Diessel 2019: Chapter 11) and can serve as a bridge facilitating the integration of linguistic analyses across theoretical frameworks. Haspelmath (2006) argues against the use of the term "markedness" in favor of descriptions of linguistic forms and their relative frequencies, yet the term persists (even in his own subsequent work, cf. Haspelmath and Karjus 2017), thanks to its usefulness in capturing relationships between meaning, form, and frequency.

Comrie (1983: 95) urged linguists to "try to account for markedness in terms of other, independently verifiable properties of people, the world, or people's conception of the world". Comrie's grounding of markedness in these terms resonates well with Langacker's (2008: 85, 39–57) description of cognitive linguistics as a framework that employs only descriptive constructs based on well-known cognitive phenomena and takes into account an encyclopedic view of meaning. The association of markedness with frequency (Haspelmath 2006 ; see Table 1 below) comports with the usage-based approach of cognitive linguistics and supports a scalar interpretation of markedness.

Markedness describes an asymmetric relationship between two or more elements that are both contrasted and related to each other (Andersen 1989: 37–39), termed "encoding asymmetries" by Diessel (2019: Chapter 11) and Haspelmath and Karjus (2017). The term "encoding asymmetry" refers to a situation in which one item is overtly marked, while the other item is not marked. The prototype – periphery structure of radial categories that is a persistent feature of cognitive linguistics (Rosch 1973a and b, Lakoff 1987, Lewandowska-Tomaszczyk 2007) is a satisfactory model for such an asymmetric relationship. The prototype – periphery structure models an asymmetric relationship, where the prototype is both contrasted to the other members of a category, while at the same time related to those other members (Mayerthaler 1980: 26). The prototype of a radial category is the unmarked member, while the other peripheral members are marked, and their markedness can be measured in terms of distance from the prototype.

Markedness and radial category structure tend to align along three parameters outlined in Table 1: expectedness, complexity, and frequency. In describing semantic markedness, Jakobson (1971[1932]) states that the unmarked member lacks a semantic mark, as opposed to a semantically marked member that has more restricted distribution. Jakobson's example is Russian *osel* 'donkey' which is unmarked for sex and can refer to any donkey, as opposed to the marked *oslica* which can only refer to a female donkey. In this example, *osel* 'donkey' is the **most expected** item because in most situations when we speak about donkeys, we are not speaking only about female donkeys and therefore do not need to specify the sex of the animal. In terms of **complexity**, *osel* 'donkey' is a monomorphemic lexeme with a semantically simple meaning, whereas *osl-ica* 'female donkey' is more semantically complex, referencing both 'donkey' and 'female', and more morphologically complex, since it is comprised of two morphemes, *osl* 'donkey' + *-ica* 'female'. In terms of **frequency**, unmarked items are typically of higher frequency than marked items, and this is borne out by corpus data. In the Russian National Corpus (ruscorpora.ru ; RNC), the unmarked *osel* 'donkey' has 5774 attestations, over twenty times more than the marked *oslica* 'female donkey', with only 281 attestations. In terms of cognitive linguistics, *osel* 'donkey' is the prototypical member of a radial category in which *oslica* 'female donkey' is a more peripheral member.

Comrie (1989: 85) describes the unmarked member of an opposition as the one that is more expected. Both of these descriptions correspond to the default nature and expectedness of a prototypical instance of a category in contrast to a peripheral instance. Diessel (2019: 224) likewise highlights the function of markedness as a "strategy to indicate constructions that deviate from listeners' linguistic expectations". The less expected marked member motivates the use of overt means to distinguish the marked member from the unmarked prototype, yielding the common observation that marked members tend to have overt morphological marks and thus higher formal complexity. The alignment of semantic complexity (unexpectedness) with formal complexity is termed by Haspelmath and Karjus (2017: 1218) "iconicity of complexity".

The relationship between markedness and frequency has a long tradition, going back at least to Greenberg (see overviews in Andersen 1989: 28–30 ; Battistella 1996: 13–14, 50–55 ; Andersen 2001: 50–51). The more expected and less complex unmarked prototype is likely to be more frequent than the less expected more complex peripheral marked member. Table 1 lays out the typical relationship among the three parameters of expectedness, complexity, and frequency, illustrated with Jakobson's example as described above. [1]

[1] The rows in Tab[le] correspond to Haspelmath's (20[...]) "senses of marke[dness]" as follows:

	unmarked ≈ prototype *osel* 'donkey'	marked ≈ periphery *oslica* 'female donkey'
expectedness	more expected used when talking about donkeys in general	less expected used only when talking specifically about female donkeys
complexity	less complex simple meaning, one morpheme	more complex complex meaning, two morphemes
frequency	more frequent 5774 attestations in RNC	less frequent 281 attestations in RNC

Table 1. Comparison of tendencies for marked vs. unmarked to align with prototype vs. periphery along the parameters of expectedness, complexity, and frequency.

For the purposes of this article, while the parameters outlined in Table 1 are certainly linked to each other, we do not presume any causal or necessary relationships among them (for relevant discussion, see Tiersma 1982, Haspelmath and Karjus 2017, Diessel 2019: Chapter 11). The challenge for our analysis is operationalizing the distinction between items that are relatively marked in relation to items that are relatively unmarked. The most accessible means for operationalizing the markedness distinction are via observation of formal (morphological) complexity and corpus frequency. Morphological complexity and frequency are therefore central to the analysis in Sections 3 and 4, although expectedness is also taken into account where appropriate. We recognize phenomena that comport with the tendencies in Table 1 along two or all three parameters as supporting the recognition of a contrast between a relatively marked vs. a relatively unmarked member of a relationship.

"Local markedness" (also known as "markedness reversal") was first identified by Tiersma (1982) to describe the fact that markedness values are not always uniform for a given grammatical category across all lexical items. Tiersma examined singular vs. plural markedness patterns, showing that for most nouns, plural is

marked (and less frequent) with respect to singular. However, some nouns, particularly those referring to objects often encountered in groups or pairs, show the opposite, with the singular as marked (and less frequent). Furthermore, multiple markedness values may converge: "a lexical item may be generally unmarked in one category and locally unmarked in another" (Tiersma 1982: 857). We will expand Tiersma's concepts of general vs. local markedness in Section 4 to show that different markedness values may also compete within a paradigm.

In the next section we explore how Russian verbal aspect has been interpreted in terms of markedness and how these interpretations correspond to the three parameters of expectedness, complexity, and frequency.

3. Russian aspect with respect to markedness

The markedness relationship that characterizes Russian aspect is generally acknowledged to be the opposite of that observed in other languages. However, the received wisdom about Russian aspect and markedness is not without controversy and the relationship is more complex than perceived at first glance.

With regard to most languages that have a perfective vs. imperfective aspectual distinction, scholars observe that perfective usually behaves as the unmarked member of the opposition, while imperfective is the marked member. Slavic languages stand out as an idiosyncratic deviation from this norm (Dahl 1985: 71–85, Binnick 1991: 136–139), with most scholars (see citations below) labeling perfective as the marked member in opposition to the unmarked imperfective. There are two other ways in which Slavic aspect deviates from the typological norm: a) extent – the grammaticalized perfective vs. imperfective distinction holds for all verb forms of all tenses and moods rather than being restricted to the past tense, and b) balance – the imperfective aspect appears in a larger range of contexts than in other languages.

In terms of extent, the Slavic aspectual distinction is realized at the lexical (derivational) level rather than the inflectional level, meaning that an entire verb is either perfective or imperfective. In Russian it is traditional to refer to verb "pairs", consisting of a perfective verb and an imperfective verb that bear the same meaning and are differentiated by aspectual morphology (prefixes and suffixes). The lexical level of aspect in Russian is illustrated in Table 2. All forms of the perfective verbs *s-vjazat'* 'knit, tie' and *pri-vjazat'* 'tie one thing to another' are perfective, whereas all forms of the imperfective verbs *vjazat'* 'knit, tie' and *pri-vjaz-yva-t'* 'tie one thing to another' are imperfective ; this generalization holds also for other verb forms not represented in Table 2, such as imperatives, gerunds, and participles.

		example verb: infinitive	past (M.SG)	inflectional non-past (3SG)	periphrastic future (3SG)
"A" pattern	perfective prefixed with *s-*	*s-vjazat'* 'knit, tie'	*s-vjaza-l* 'he knitted, tied'	***s-vjaž-et* 's/he will knit, tie' [FUT]**	-
	simplex imperfective	*vjazat'* 'knit, tie'	*vjaza-l* 'he knitted, tied'	*vjaž-et* 's/he knits, ties'	***budet vjazat'* 's/he will knit, tie' [FUT]**
"B" pattern	perfective prefixed with *pri-*	*pri-vjazat'* 'tie one thing to another'	*pri-vjaza-l* 'he tied one thing to another'	***pri-vjaž-et* 's/he will tie one thing to another' [FUT]**	-
	imperfective suffixed with *-yva-*	*pri-vjaz-yva-t'* 'tie one thing to another'	*pri-vjaz-yva-l* 'he tied one thing to another'	*pri-vjaz-yva-et* 's/he ties one thing to another'	***budet pri-vjaz-yva-t'* 's/he will tie one thing to another' [FUT]**

Table 2. Illustration of Russian tense and aspect morphology using verbs and forms related to vjazat' 'knit, tie'. Hyphens indicate morpheme boundaries in order to clarify the presence of aspectual prefixes (s- and pri-) and suffixes (-yva). Forms associated with future tense are shaded and marked "[FUT]".

In the majority of instances, the aspectual difference in Russian is overtly marked by morphology, following one of two patterns, either: A) a prefix marks perfective as opposed to an imperfective verb without the prefix, or B) a perfective verb (often with a prefix) is opposed to an imperfective verb that is marked with a suffix. **2** In the top half of Table 2, the "A" pattern is illustrated with the prefixed perfective verb *s-vjazat'* and its corresponding imperfective simplex verb *vjazat'*, both of which mean 'knit, tie' (but differ in aspect). The "B" pattern is illustrated in the bottom half of Table 2 with the perfective *pri-vjazat'* 'tie one thing to another' and the suffixed secondary imperfective *pri-vjaz-yva-t'* that shares the same meaning (with the only difference being in aspect).

In terms of balance, Slavic languages use (or allow) an imperfective in situations where most other languages would require a perfective. The skew toward imperfective is particularly strongly documented for Russian. For example, a detailed comparison of contexts with perfective verb forms in Spanish but imperfective verb forms in Russian (Janda & Fábregas 2019) shows that Russian uses imperfective in many contexts where Spanish uses perfective (but note that the reverse can also occur, cf. Fábregas & Janda 2019).

Scholarship on Russian aspect in the twentieth century was dominated by the invocation of features, where the positive value is associated with the perfective aspect as the marked member of the opposition, while the imperfective lacks the feature. The features that characterize perfective aspect fall in three (somewhat overlapping) groups: boundedness, totality, and definiteness.

Boundedness or telicity refers to the reaching of a limit (Jakobson 1971[1957], Avilova 1976). For the perfective verbs in Table 2, this means that the act of knitting or tying has come to a close. Other names for (approximately) the same feature include delimitation (Bondarko 1971), demarcatedness/dimensionality (van Schooneveld 1978), and closure (Timberlake 1982).

Totality captures the idea that a perfective situation is viewed as a complete whole (Isačenko 1960, Maslov 1965, Bondarko 1971, Comrie 1976, Smith 1991, Durst-Andersen 1992). This comports also with Wierzbicka's (1967/2018) observation that the Slavic imperfective (based on Polish examples) has a more general meaning as opposed to the perfective that refers to a specific completion. For our knitting and tying verbs, this means that the knot is finished. Totality is akin both to Vinogradov's (1972) completion feature and to Langacker's (2008: 111–112) summary scanning.

Both Bondarko (1971) and Dickey (2000) use the feature definiteness to characterize the tendency of the perfective to refer to single, individuated actions, as a verbal parallel to nominal definiteness which refers to single, individuated entities. With respect to the knitting and tying verbs in Table 2, this means that a perfective verb references a specific unique event.

There are some dissenters from the majority opinion that the Russian perfective is marked and the imperfective is unmarked. Galton considered the markedness values for Slavic to be the reverse, following the typological norm of perfective as unmarked and imperfective as marked. Galton's (1976: 289) argument is based primarily on the parameter of expectedness, stating that it is more usual and thus grammatically less marked to view "an occurrence as part of its temporal succession", his characterization of the function of the perfective. Padučeva (1996) argued that the distinction in Russian is equipollent, because both the perfective and the imperfective have positive characteristics, and the complexity of imperfective uses cannot be accounted for by means of a lack of a feature. Zaliznjak and Šmelev (2000: 16–17) are more equivocal: while acknowledging the "real asymmetry" that is captured by the traditional interpretation of perfective as marked and imperfective as unmarked, they conclude that the importance of markedness for Russian aspect has been overrated.

Thus, the prevailing view of scholarship on Russian aspect is that perfective is marked and imperfective is unmarked. We reexamine this assessment in the light of evidence in terms of the parameters in Table 1. We will examine the question of the markedness of perfective vs. imperfective at various levels: the category level of total presence of perfective vs. imperfective, the local lexeme level of three major patterns of aspectually paired verbs ("A" and "B" in Table 2, plus "C" in Table 4 below), and the local level of the future tense subparadigm. The lexeme levels will be addressed in the following subsections, while the question of the local level of the future tense will occupy Section 4.

3.1 The category level of perfective vs. imperfective

Is the consensus view that perfective is marked and imperfective is unmarked supported by frequency data ? If so, we would expect imperfective verb forms to be more frequent than perfective verb forms. We can search the Russian National Corpus (ruscorpora.ru, henceforth "RNC") to compare the overall occurrence of all perfective vs. imperfective verb forms. As of January 2021, the RNC contained 321 712 061 words, 26 575 727 of which are perfective verb forms, and 32 459 309 of which are imperfective verb forms. In other

words, 45 % of verb forms are perfective and 55 % are imperfective. It appears that there are indeed more imperfective than perfective verb forms. However, this difference is not very large, and although it is statistically significant, the effect size is an order of magnitude too low to be considered an important difference. [3] The frequency difference therefore lends at best weak support to the claim that perfective is marked and imperfective is unmarked at the level of the entire category of aspect.

As stated above, we examine at least two parameters in evaluating a markedness relationship: frequency and morphological complexity. As we show in the next subsection, the morphology of Russian can point to both perfective and imperfective as marked.

3.2 Local lexeme level of "A" and "B" patterns of aspectually paired verbs

The two predominant patterns of Russian aspectual morphology illustrated in Table 2 show opposite patterns of morphological complexity. Both the "A" and the "B" patterns involve aspectual pairs of verbs, where both verbs have the same meaning and differ only in their aspectual values. In the "A" pattern, the imperfective verb is what we call "simplex" because it has no aspectual morphology, no prefix or suffix that identify it as perfective or imperfective. The perfective verb in the "A" pattern is formed by adding a perfectivizing prefix to the imperfective verb. Thus, in the "A" pattern, the perfective is morphologically more complex. In the "B" pattern, both the perfective and the imperfective verb bear a prefix, and the imperfective is formed by adding an imperfectivizing suffix to the perfective verb. Thus, in the "B" pattern, it is the imperfective that is morphologically more complex.

Given that both the "A" pattern and the "B" pattern give evidence of morphological complexity, albeit in different directions, it makes sense to ask whether frequencies support indications of markedness values. Although the RNC does not tag verbs according to whether they belong to the "A" pattern or the "B" pattern, Janda & Lyashevskaya (2011) undertook a large-scale analysis of nearly six million verb forms in the RNC to identify verbs according to their morphological pattern. The data cited by Janda & Lyashevskaya is disaggregated according to subparadigms (infinitive, past, non-past, and imperative), and has been reaggregated to represent the total frequency of each of the two patterns in Table 3. The frequency of past tense forms is provided for an additional comparison in the rightmost column of Table 3. [4]

Pattern	Aspect	Morphological complexity	Total frequency	Frequency of past tense forms
"A" pattern	perfective	simplex + prefix	528 749	317 570
	imperfective	simplex	1 105 655	397 409
"B" pattern	perfective	simplex + prefix	2 618 534	1 654 717
	imperfective	simplex + prefix + suffix	1 698 312	517 965

Table 3. Comparison of the morphological complexity and frequency of perfective and imperfective Russian verbs following the dominant "A" and "B" patterns. Frequency data is cited from Janda & Lyashevskaya 2011. [5]

If we look at total frequency in Table 3, within the "A" pattern, perfective verbs are relatively more complex morphologically, and imperfective verbs are more than twice as frequent. The overall frequency difference in the "A" pattern is both significant and of a reportable size. Within the "B" pattern, it is the imperfective verbs that are relatively more complex morphologically, and perfective verbs are more frequent. The overall frequency difference in the "B" pattern is likewise both significant and of a reportable size. [6] If we examine the frequency of the past tense, all the same observations hold: the differences between past tense frequency and total frequency are significantly different and of a reportable size for both the "A" and the "B" patterns. [7] However, it is important to note that all of the effect sizes for these differences are small (Cramer's V values < 0.2).

To summarize, for the "A" pattern it is perfective that is more complex and less frequent, but for the "B" pattern it is imperfective that is more complex and less frequent.

Both the morphological complexity and the frequency data in Table 3 support an interpretation of local markedness according to which perfective verbs are marked in pattern "A", but unmarked in pattern "B",

although the frequency data gives only modest support to this interpretation. While patterns "A" and "B" represent the largest morphologically defined groups of aspectually paired verbs, it is also possible to look at another smaller pattern, "C", where the meanings of the verbs are arguably an important factor.

3.3 Local level of simplex perfective verbs

Tiersma (1982) observed that the semantics of some nouns can lead to local markedness values that reverse the markedness values of the majority of nouns, namely that nouns referring to items usually found in pairs or groups tend to have singular as their marked value, with corresponding higher formal complexity and lower frequency. We suggest that analogous semantic factors can come into play also for verbal aspect. In Russian, most simplex verbs are imperfectives that signal activities (like *vjazat'* 'knit, tie' in Table 2) or states (like *sidet'* 'sit'). However, there are a few simplex verbs that signal achievements and are perfective. Four such perfective simplex verbs that have imperfective correlates are presented in Table 4. We can call this the "C" pattern of morphological marking of aspect in Russian.

	Aspect	Morphological complexity [8]	Total frequency	Frequency of past tense forms
'give'	perfective *dat'*	simplex	323 798	73 641
	imperfective *da-vat'*	simplex + suffix	162 109	29 680
'stand up'	perfective *vstat'* [9]	simplex	57 392	40 421
	imperfective *vsta-vat'*	simplex + suffix	24 722	5 896
'decide'	perfective *rešit'*	simplex	105 240	73 740
	imperfective *reš-at'*	simplex + suffix	25 277	2 823
'receive'	perfective *polučit'*	simplex	172 486	68 760
	imperfective *poluč-at'*	simplex + suffix	57 111	13 049

Table 4. The "C" pattern: four perfective simplex verbs and their suffixed imperfective correlates. Frequency data is cited from the RNC.

Giving, standing up, deciding, and receiving are all situations that tend to be understood as momentary, complete, and unique. The semantics of these verbs motivates the interpretation of perfective as relatively more expected and therefore unmarked. This interpretation is supported both by morphological complexity, which is higher for the corresponding imperfectives that are overtly marked by suffixes, and by frequency, which is higher for the perfectives. All of the differences in frequency presented in Table 4 are statistically significant and represent reportable differences. [10] In the case of 'decide' the total frequency difference approaches a medium effect size.

In sum, we see that it is hard to support an overall category-level interpretation of perfective as marked and imperfective as unmarked in Russian, since frequency is inconclusive at that level. Instead, we find more convincing alignments of morphological complexity, frequency, and even expectedness within groups of verbs that have different markedness values for aspect. "A" pattern verb pairs support the interpretation of perfective as marked and imperfective as unmarked. "B" and "C" pattern verb pairs support the interpretation of imperfective as marked and perfective as unmarked.

We find that a finer grained analysis gives us a better analysis. This finding motivates us to investigate whether it is possible to take this line of reasoning one step further and look at a part of the verbal paradigm where there are additional differences in the morphological complexity, namely the future tense. In order to answer this question, however, we must overcome the considerable obstacles that stand in the way of accurately measuring the corpus frequency of the Russian future tense.

4. The Russian future

8 There are three imperfectivizing s in Russian: *-yva(* *iva(j)* is illustrate Table 2, *-v* (...)

9 Although etymologically *vs* up' contained a p (*vz-*), this prefix suffered phonol (

10 The comparis the following valu total frequency (s values obtain for tens (...)

There is one major gap in the data presented by Janda & Lyashevskaya (2011): that study did not address the future tense in Russian. There is a good reason for this, namely that due to a variety of confounding factors, it is notoriously difficult to measure the occurrence of the future tense in Russian. In this section we present the first attempt at an accurate measure of the corpus frequency of the Russian future tense.

As illustrated in Table 2, inflected verb forms in Russian can express two tenses, one that is past, and one that is not past. The non-past forms of perfective verbs (such as *s-vjaž-et* 's/he will knit, tie' and *pri-vjaž-et* 's/he will tie one thing to another') are associated with future tense (FUT), and we refer to them as "future forms" in this article. The corresponding non-past forms of imperfective verbs are associated with present tense. For imperfective verbs the future tense is expressed by means of a periphrastic form consisting of an auxiliary that expresses person and number combined with the imperfective infinitive form. The auxiliary is identical to the forms of the verb *byt'* 'be', which is the only verb in Russian that can be said to have a true dedicated future form ; *budet* when it is not an auxiliary, for example, means 's/he will be' as in (1).

(1) Zavtra   on   uže   bud-et   v   Magadan-e.

    tomorrow he.NOM already will.be-3.SG in Magadan-LOC.SG

    'Tomorrow he **will** already **be** in Magadan.'

    [J. Rytxèu. V doline Malen'kix Zajčikov, 1962] **11**

In Table 2, the periphrastic imperfective future form is illustrated by *budet vjazat'* 's/he will knit, tie' and *budet pri-vjaz-yva-t'* 's/he will tie one thing to another', and we call these "future forms" as well. In this section, we focus on the future forms of both perfective and imperfective verbs such as those in the shaded boxes in Table 2.

For the purposes of this part of our analysis, the most important fact to observe from Table 2 is that an imperfective future form is always both longer and more morphologically complex than the corresponding perfective future form. This is because the perfective future form is merely a conjugated form of the verb, whereas the imperfective future form is a conjugated auxiliary form plus the imperfective infinitive. Isačenko (1960: 444) considers the more morphologically complex imperfective future form to be marked in relation to the perfective future form, despite the fact that his overall assessment is that perfective is marked in relation to imperfective.

Ideally, one would hope to get some global statistics on the distribution of perfective and imperfective future forms from the RNC. Unfortunately, due to various facts of Russian morphology and syntax, it is not easy to extract exact numbers reflecting all and only such future forms. These facts involve homonymy and non-contiguity of periphrastic forms. Tagging available in the RNC does not always successfully identify perfective future forms, and does not identify imperfective future forms at all.

4.1 Homonymy and non-contiguity of future forms

Homonymy is problematic for three reasons, involving syncretism within and across verb paradigms. The first type of homonymy occurs when a perfective non-past second person plural form is homonymous with the second person plural imperative form of the same verb, as in *pogovori-te*, which is analyzed either as [speak.pfv-fut.2.pl] 'you will speak' or [speak.pfv-imp.2.pl] 'speak !' depending on context. **12** Note how these two examples illustrate the two possible interpretations of *pogovorite* 'talk', both from the same author. In (2a) we see the future form, and in (2b) we see an imperative form.

(2) a. … mož-et   by-t'   vy   vse-taki   pogovori-te

       may-3.SG   be-INF   you.NOM anyhow   speak.pfv-fut.2.pl

       so   svo-im   ženix-om ob"jasn-ite emu

       with   own-m.ins.sg fiancé.INS.SG explain.pfv-fut.2.pl he.DAT

       moj-u   situacij-u…

       my-f.acc.sg   situation-ACC.SG

'…maybe you **will talk** with your fiancé anyhow, and explain my situation to him…'

[Aleksandra Marinina. Poslednij rassvet. 2014]

b. Poslušaj-te,   pogovori-te   s

listen.pfv-imp.2.pl   speak.pfv-imp.2.pl   with

rabotnik-ami   polici-i…

worker-INS.PL   police-GEN.SG

'Hey, **talk** to the police officers…'

[Aleksandra Marinina. Angely na l'du ne vyživajut. 2014]

A second type of homonymy involves biaspectual verbs such as *operirova-t'* [operate.pfv/ipfv-inf] 'operate' that can express either aspect, again depending on context, as in *operiruj-ut* [operate.pfv-fut.3.pl] 'they will operate' as in (3a) vs. [operate.ipfv-prs.3.pl] 'they operate' as in (3b).

(3) a. Zavtra   ee   operiruj-ut.

tomorrow   she.ACC   operate.pfv-fut.3.pl

'She will be operated on tomorrow.'

[Nina Katerli. «Skvoz' sumrak bytija» // «Zvezda», 2002]

b. Nu   čto   ja   mog-l-a

well   what.ACC   I-nom   can-pst-f.sg

ej   vozrazi-t'?   Čto   bol'šinstv-o —

she.DAT   object.PFV-INF   that   majority-NOM.SG

podavljajušč-ee!   — xirurg-ov   operiruj-ut   besplatno?

overwhelming-N.NOM.SG surgeon-GEN.SG operate.ipfv-prs.3.pl for.free

'Well, what could I say to persuade her otherwise? That the vast majority of surgeons **operate** for free?'

[I. Grekova. Perelom, 1987]

Some prefixed motion verbs present a third type of homonymy, since they have two interpretations that are differentiated both by aspect and by semantics (involving two separate verbs), as in *s-xož-u* [roundtrip-walk.pfv-fut.1.sg] 'I will go and come back' vs. in *s-xož-u* [down-walk.ipfv-prs.1.sg] 'I am going down' which is also frequently part of the idiom *s-xodi-t' s uma* [literally 'walk down from mind'] meaning 'go crazy'. Only the first verb expresses future tense, illustrated in (4a) ; (4b) expresses present tense.

(4) a. Cirk   — èto   detsk-ie

circus.NOM.SG   that   childhood-NOM.PL

vospominanij-a   i   položitel'n.ye   èmocii!

memory-NOM.PL   and   positive-NOM.PL   emotion-NOM.PL

Objazatel'no   sxožu.

definitely   roundtrip-walk.PFV-FUT.1.SG

'The circus is childhood memories and positive emotions! I **will** definitely **go**.'

[kollektivnyj. Forum: Poxod v cirk, 2010]

b.

Ja	ponimaj-u,	čto	potixon'ku
I.nom	understand.ipfv-prs.1.sg	that	slowly
sxožu		s	um-a.
down-walk.ipfv-prs.1.sg		from	mind-gen.sg

'I understand that I'**m** slowly **losing** my mind.'

[Sati Spivakova. Ne vsë, 2002]

The homonymies described above are to some extent mitigated in the disambiguated portion of the RNC, however, manual exploration of this data turns up too much noise to allow for precise measures.

Worse still is the problem of the periphrastic imperfective future, which allows both for insertion of words and various orderings of words, and additionally is confounded by the existence of phrases that can "masquerade" as future forms. For example, in *bud-et snova sprašiva-t'* [be.fut-3.sg again ask.ipfv-inf] 's/he will ask again' there is the adverb *snova* 'again' between the auxiliary and infinitive parts of the future, and (5) shows that it is possible to have not just one intervening word form but many ; in this example there are five (including the two clitics *li* 'whether' and *že* 'emphasis'). It is also possible to invert the order of the auxiliary and the infinitive, as in *sprašiva-t' bud-et* [ask.ipfv-inf be.fut-3.sg] 's/he will ask'.

(5)

I	bud-et	li	ona	mne	tak	že
and	be.fut-3.sg	whether	she.NOM	I.dat	so	emphasis
nravi-t'-sja		ili	net	— ja	ne	znaj-u
please.impf-inf-refl		or	not	I.nom	not	know.impfv-prs.1.sg

'And whether I **will like** her as well or not – I do not know.'

[Evgenij Griškovec. OdnovrEmEnno, 2004]

Furthermore, (6) shows that we can encounter multiple intervening words also when we have the reverse word order, with the infinitive first, intervening words, and then the auxiliary verb.

(6)

Tak	ja	dumaj-u,	a	sprašiva-t',
so	I.nom	think.impfv-prs.1.sg	but	**ask.ipfv-inf**
požaluj,	ni	u	kogo	ne	bud-u.
probably	not	by	who.GEN	not	**be.fut-1.sg**

'I think so, but I **will** probably not **ask** anyone.'

[Alla Bossart. Povesti Zajceva // « Družba narodov », 1998]

One can also find future expression of modals that govern infinitives, yielding both word-order options, as in *možno bud-et sprašiva-t'* [possible be.fut-3.sg ask.ipfv- inf] 'it will be possible to ask' and *sprašiva-t' bud-et možno* [ask.ipfv-inf be.fut-3.sg possible] 'it will be possible to ask' ; both word orders are found in (7).

(7)

Ved'	kogda-nibud'	— on	obešča-l —	sprašivat'
after.all	someday	he.NOM	promise.pfv-pst.m.sg	**ask.ipfv-inf**
budet	možno,	možno	budet	sprašivat' !

be.fut-3.sg   possible   possible   be.fut-3.sg   ask.ipfv-inf

'After all, someday – he promised – it will be possible to ask, to ask will be possible.'

[Dina Rubina. Russkaja kanarejka. Bludnyj syn, 2014]

These modal expressions look like imperfective future forms of the verb *sprašiva-t'* 'ask', but this is not the case. The future form of *byt'* 'be' in these examples is not the auxiliary of the periphrastic future but instead signals the tense that applies to the modal expressions with *možno* 'possible'. Examples like these of future forms of *byt'* 'be' that just happen to be collocated with an imperfective infinitive are common in Russian, and there is no automatic way to disambiguate them in a corpus.

4.2 A sample to represent the overall incidence of future forms

Due to the challenges presented by homonymy and non-contiguity of periphrastic future forms, we have opted to select a group of ten high-frequency perfective and imperfective verb pairs (represented in Table 5 and Figure 1), in order to undertake a targeted study in which we manually check the examples to be certain that we include all and only the future forms of the verbs. We used frequency, plus morphological and semantic criteria to select this set of verbs. For all of these verb pairs, both the perfective and the imperfective verbs appear at a rate of over 100 total attestations (including all inflected forms) per million words (ipm) in the disambiguated subcorpus of the Russian National Corpus.

The verbs are stratified in both Table 5 and Figure 1 according to the three morphological patterns of aspectually paired verbs, "A", "B", "C", plus suppletion. Our sample contains four pairs of prefixed perfectives paired with primary imperfectives ("A" pattern in Tables 2 and 3), three pairs of prefixed perfectives paired with secondary imperfectives ("B" pattern in Tables 2 and 3), two pairs of a primary perfective paired with a secondary imperfective ("C" pattern as in Table 4), and one suppletive pair. We also represent semantic variety, with verbs that express both physical and mental actions, as well as verbs of speaking (verba dicendi).

Since our sample of ten verb pairs does not include either biaspectual verbs or prefixed verbs of motion, the only homonymy that is problematic is the type involving imperative vs. indicative forms. Three of the ten perfective verbs in Table 5 have second person plural future forms that are homonymous with imperatives, namely: *sprosite* 'ask', *polučite* 'receive', and *posmotrite* 'look'. All of the attestations of these forms found in the disambiguated RNC were analyzed by hand to determine which of them were truly future forms, and those future forms were added to the total numbers of all other future forms for those three verbs, thus giving accurate counts. The data in the rightmost column of Table 5 and in Figure 1 are thus based on the total number of perfective future forms adjusted to disambiguate them from imperatives.

Verb pair: Perfective / Imperfective	Gloss	Morphological marking of aspect	Total frequency Perfective / Imperfective	Frequency of past tense forms Perfective / Imperfective	Adjusted estimate of future forms Perfective / Imperfective
u-videt' /	'see'	"A": prefixed perfective /	124 683 /	64 819 /	20 756 /
videt'		primary imperfective	322 185	109 050	1 647
po-dumat' /	'think'	"A": prefixed perfective /	83 115 /	50 524 /	8 023 /
dumat'		primary imperfective	230 969	78 741	2 063
po-smotret' /	'look'	"A": prefixed perfective /	80 525 /	38 309 /	17 914 /

13 The total freq for the verb pair 'understand' devi from the aggrega pattern re (...)

smotret'		primary imperfective	189 804	62 036	1 455
na-pisat' / \n\n pisat'	'write'	"A": prefixed perfective / \n\n primary imperfective	96 192 / \n\n 146 918	33 836 / \n\n 53 850	7 637 / \n\n 2 201
s-prosit' / \n\n s-praš-iva-t'	'ask'	"B": prefixed perfective / \n\n secondary imperfective	166 207 / \n\n 61 260	141 176 / \n\n 20 462	9 208 / \n\n 690
ponjat' / \n\n ponim-at'	'understand'	"B": prefixed perfective / \n\n secondary imperfective	136 150 / \n\n 139 109 [13]	73 194 / \n\n 31 310	13 023 / \n\n 277
prinjat' / \n\n prinim-at'	'accept'	"B": prefixed perfective / \n\n secondary imperfective	118 645 / \n\n 60 591	42 031 / \n\n 18 048	9 657 / \n\n 375
dat' / \n\n da-vat'	'give'	"C" perfective simplex / \n\n secondary imperfective	286 575 / \n\n 143 974	73 641 / \n\n 29 680	35 578 / \n\n 779
polučit' / \n\n poluč-at'	'receive'	"C" perfective simplex / \n\n secondary imperfective	152 984 / \n\n 50 738	68 760 / \n\n 13 049	15 434 / \n\n 1 145
vzjat' / \n brat'	'take'	suppletive	170 655 / \n 65 231	73 528 / \n 15 832	20 756 / \n 655

Table 5. Sample of verb pairs that demonstrate relative frequencies of perfective and imperfective future forms in Figure 1.

For each imperfective verb in Table 5, a sample of 100 attestations of infinitive forms was extracted and analyzed to determine the rate of genuine future forms, taking into account various word orders and discontinuous periphrastic forms to arrive at an estimate of the percentage of genuine futures. This sample yielded a percentage of genuine futures that could then be applied to extrapolate a good estimate of the actual occurrence of periphrastic future forms for each imperfective verb. In most cases this increased the total number of imperfective futures that were identified, since we were able to include all examples regardless of how many intervening words separated the auxiliary from the infinitive. Overall, our targeted survey shows that the disambiguated RNC tends to underreport the number of both perfective and imperfective future forms.

Agrandir   Original (png, 119k)

Figure 1. Visualization of data in rightmost column of Table 5: sample of high-frequency verb pairs showing the distribution of perfective non-past and imperfective periphrastic future forms for each verb pair.

Figure 1 visualizes the adjusted estimate of future forms as indicated in the rightmost column of Table 5. The "A" pattern verb pairs are shown in brown, the "B" pattern in green, the "C" pattern in blue, and the suppletive verb pair in red. Within each pair, the lighter hue indicates the perfective future forms, while the darker hue indicates the imperfective future forms. The main point of Figure 1 is to show that the frequency of perfective future forms far exceeds that of imperfective future forms. On average across our ten verb pairs, the perfective future makes up 11.44 % of the attestations of perfective verbs, whereas the imperfective future makes up 0.94 % of the attestations of imperfective verbs. For our ten verb pairs, the total number of perfective future forms is 157 986, whereas for imperfectives we find 11 287 future forms. The overall estimated ratio of perfective future forms to imperfective future forms is 14:1. The type of aspectual morphology ("A" pattern, "B" pattern, "C" pattern, suppletive) does not influence this effect. For each individual verb pair, the frequency of perfective futures is many times higher than the frequency of imperfective future forms, and in aggregate the difference is one of an order of magnitude.

4.3 Evaluating perfective vs. imperfective markedness in the Russian future

The difference in frequency between perfective and imperfective future forms is very strong. In order to evaluate frequency differences for the comparisons made in Section 3, we needed statistical tests, and the effect sizes even where reportable were small or approaching medium at best. With respect to future tense forms, the size differences are large: they are not a matter of percentage points but of multiples. And the frequency of future forms aligns with their morphological complexity, as displayed in Table 6.

Aspect	Morphological complexity of future form	Frequency ratio
perfective	conjugated verb form	14
imperfective	conjugated auxiliary verb form + infinitive	1

Table 6. Parameters indicating markedness for aspect in the future tense.

The parameters in Table 6 strongly support the conclusion that for the future tense, perfective is unmarked (less morphologically complex and higher frequency), while imperfective is marked (more morphologically complex and lower frequency). This is a striking conclusion because it is the opposite of the prevailing opinion cited in Section 3 that perfective is marked and imperfective is unmarked.

5. Conclusion

Markedness, also known as encoding asymmetry, is a pervasive fact of language in which three parameters tend to align: expectedness of meaning, complexity (of both form and meaning), and frequency. Observations of markedness span linguistic traditions, and due to the relevance of both the form-meaning relationship and frequency, markedness is highly relevant for cognitive linguistics as a usage-based framework.

In Russian, aspect is expressed at the level of the verb as perfective or imperfective. It is traditionally assumed that the markedness of Russian aspect runs counter to that of other languages with a perfective vs. imperfective distinction, namely that in Russian perfective is marked and imperfective is unmarked. However, overall frequency data is inconclusive: we do not find support for category-level markedness of perfective vs. imperfective. At the local levels of lexemes, we find more convincing alignments of morphological complexity and frequency that indicate that perfective can behave both as marked and as unmarked. Three patterns of morphological coding of aspect all show alignment of the parameters, though they don't all point to the same markedness values. The "A" pattern has higher morphological complexity for the perfective, which also is of lower frequency, suggesting that perfective is marked. The "B" and "C" patterns have lower morphological complexity for the perfective, which is also of higher frequency, suggesting that perfective is unmarked. But even at these local levels, the significant effect sizes of frequency differences are small.

We take the analysis one step further by examining the encoding asymmetry in the future tense. The future tense in Russian is special for two reasons. First, there is a consistent difference in morphological complexity with respect to aspect: perfective future forms are simply conjugated forms of the verb, and imperfective future forms are more complex, consisting of a conjugated auxiliary verb plus an infinitive. Second, there are many hurdles to measuring the frequency of the future tense in Russian due to confounding factors presented by homonymy, word order, and non-contiguous forms. We present a methodological solution involving the stratification of a sample of verbs according to aspectual morphology, sampling, manual examination of thousands of forms, and extrapolation. This yields the first reasonably accurate estimate of the real incidence of perfective and imperfective future forms and the discovery that perfective future forms are about fourteen times more frequent than imperfective future forms. This measurement supports a remarkable conclusion, namely that within the future tense, perfective is consistently unmarked while imperfective is marked. This conclusion is the opposite of the majority opinion in traditional Russian linguistics.

In sum, we offer support for the theoretical position of Tiersma (1982) that markedness must be understood primarily at the local level. We contribute to the understanding of markedness within the usage-based framework of cognitive linguistics (cf. Diessel 2019: Chapter 11) with a detailed illustration of a case study of the encoding asymmetries presented by Russian aspect and how these asymmetries pattern with relative corpus frequency. We make a methodological contribution to the solution of a difficult issue in determining corpus frequency. And we present the first accurate description of the relative frequency of the Russian future tense for both perfective and imperfective verbs.

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Notes

1 The rows in Table 1 correspond to Haspelmath's (2006) "senses of markedness" as follows:

expectedness = senses 4, 5, 6, 11 (markedness as difficulty, deviation from default)

complexity = senses 1, 2, 3 (markedness as specification for a distinction and overt coding)

frequency = senses 7, 8, 9, 10 (markedness as rarity and restricted distribution)

2 There are several hundred biaspectual verbs that do not overtly mark aspect, but most scholars argue that in context a biaspectual verb always expresses only one aspect (see Author2 2007: 90 and Zaliznjak and Šmelev 2000: 10 and citations therein).

3 A comparison of the numbers of perfective and imperfective against the total number of verbs yields a chi-square value of 391 854, df = 1, a p-value of 0, and a Cramer's V effect size of 0.047. Cramer's V effect size is interpreted as follows: 0.1 = small, 0.3 = medium, 0.5 = large. Cramer's V effect sizes below 0.1 are considered too low to be reportable.

4 We are grateful to an anonymous reviewer who suggested that it would be helpful to cite the frequency of past tense forms in addition to the total frequency, since the past tense is the one tense in which perfective and imperfective verbs share the same inflectional morphology in Russian (see Table 2). As shown in Tables 3, 4, and 5, the overall pattern is the same regardless of whether one compares the total frequency or the frequency of the past tense, with the exception of the verb pair meaning 'understand' in Table 5.

5 It might seem that the data in Table 3 contradict the overall data cited from the RNC in Section 3.1 because the overall data shows a that imperfective verb forms are somewhat more frequent, whereas aggregation of the data in Table 3 indicates that perfective verbs are more frequent. However, the RNC data cited in Section 3.1 represents all verbs regardless of whether they are paired for aspect (as most verbs are) or unpaired, whereas the data in Table 3 represents only paired verbs according to patterns "A" and "B". There are also unpaired verbs in Russian, in particular the verb *byt'* 'be' which is imperfective, and which is of very high frequency, thus accounting for part of the apparent discrepancy.

6 Comparison of the numbers of perfective and imperfective against the total number of verbs in the "A" pattern yields a chi-square value of 140053, df= 1, a p-value of 0, and a Cramer's V effect size of 0.168. Comparison of the numbers

of perfective and imperfective against the total number of verbs in the "B" pattern yields a chi-square value of 132234, df= 1, a p-value of 0, and a Cramer's V effect size of 0.101.

7 Comparison of the numbers of past perfective and past imperfective against the total number of verbs in the "A" pattern yields a chi-square value of 30968, df= 1, a p-value of 0, and a Cramer's V effect size of 0.116. Comparison of the numbers of perfective and imperfective against the total number of verbs in the "B" pattern yields a chi-square value of 159684, df= 1, a p-value of 0, and a Cramer's V effect size of 0.154.

8 There are three imperfectivizing suffixes in Russian: *-yva(j)/-iva(j)* is illustrated in Table 2, *-va(j)* is found in *da-vat'* 'give' and *vsta-vat'* 'stand up', and *-a(j)* is found in *poluč-at'* 'receive' *reš-at'* 'decide' (cf. conjugation *reš-aj-u* 'I decide').

9 Although etymologically *vstat'* 'stand up' contained a prefix (*vz-*), this prefix has suffered phonological erosion to the point that it is no longer recoverable for contemporary speakers. This verb functions as a simplex stem in modern Russian according to Endresen and Plungian (2011).

10 The comparisons yield the following values for total frequency (similar values obtain for past tense forms):

'give': chi-square value = 36872, df= 1, p-value = 0, Cramer's V = 0.158.

'stand up': chi-square value = 9019.3, df= 1, p-value = 0, Cramer's V = 0.189.

'decide': chi-square value = 36192, df= 1, p-value = 0, Cramer's V = 0.295.

'receive': chi-square value = 41286, df= 1, p-value = 0, Cramer's V = 0.24.

11 All examples in this article are cited from the Russian National Corpus (ruscorpora.ru), the metadata in their passports are given in square brackets.

12 For some verbs stress disambiguates the perfective future from the imperative, but stress is not marked in the corpus.

13 The total frequencies for the verb pair meaning 'understand' deviates from the aggregate pattern reported for "B" pattern verbs in Table 3 in that there is virtually no difference in frequency. Note, however, that the past tense frequencies for this verb pair do reflect the overall tendency for "B" pattern perfective verbs to be of higher frequency than imperfective verbs.

Table des illustrations
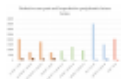
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