

Four ways to tremble in Russian: a case study of a Radial Category

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Many dictionaries and other lexicographic resources often describe near-synonyms using one another, which makes it difficult for a foreign language learner to make a choice between them. Although it is true that near-synonyms can be used when referring to the same state of affairs, they often involve different construals, insofar as they represent different ways of viewing the situation in question. Quite often, not all alternatives are possible in a given context, but it is not an easy task to pinpoint which alternative is possible in which context. In this study I consider a group of nearly synonymous verbs with the meaning ‘*tremble*’ in Russian and attempt to build a radial category network of meanings based on corpus data. I show that the network accommodates the similarities among the verbs, but at the same time also brings out the differences among them.

Section 1 contains a short description of approaches to near-synonyms. My data are described in Section 2. Section 3 attempts a quantitative analysis of frequencies of the verbs and a network of their meanings. The results are summarized in Section 4.

1. Radial Category Profiling and near-synonyms

One possible way of describing the meanings of a linguistic unit is by means of a Radial Category that represents a network of related submeanings (subcategories) organized around a prototype – the semantically central submeaning. All the remaining meanings are motivated by the prototype via basic cognitive mechanisms such as metaphor and metonymy or via modifications of its image schema. The submeanings themselves are not discrete nodes, so any random example does not have to fit into only one of the given subcategories. This allows us to account for gradient linguistic data.

An extension of this model called Radial Category Profiling is proposed by Nessel et al. (2011) and defined as a “relative frequency distribution of subcategories of a radial category”. In their study, Nessel and colleagues built and compared radial category



networks of four types of verbs (275 verbs in all): specialized and natural perfectives formed with the two closely related Russian aspectual prefixes *вы-* (*vy-*) and *из-* (*iz-*) using statistical analysis. This analysis proved to be a powerful tool that facilitates measuring of subtle similarities and differences of closely related categories such as synonymous prefixes.

A related approach called Behavioral Profiles is used in works by Divjak and Gries devoted to near-synonymous verbs. This approach relies on the “parallelism between the distributional and functional planes” (Divjak and Gries 2009, 277), and involves extracting variables from a sample of corpus sentences. Together these variables depict characteristics of a linguistic unit under study and form its behavioral profile. Divjak and Gries (2006) tagged 1585 occurrences of nine near synonymous verbs meaning ‘try’ in Russian, coded them in terms of eighty-seven variables, i.e. morphosyntactic, syntactic and semantic characteristics of the verbs, and thus created their behavioral profiles. The profiles were defined by the scores for the variables and then subjected to statistical analysis.

These approaches allow us to undertake comparisons between near synonyms and measure the semantic distances between them. One should note, however, that the methods mentioned above are not the only possibility for describing linguistic units by means of linguistic profiling. Other approaches include Constructional Profiles (Janda and Solovyev 2009), Grammatical Profiles (Janda and Lyashevskaya 2011), Semantic Profiles (Janda and Lyashevskaya 2013). For more detailed discussion, see Kuznetsova 2013.

The present paper is an attempt to build a network of constructions that characterize near-synonymous Russian verbs with the meaning ‘*tremble*’. To do this, I will try to answer the following research questions:

- Which meaning is the prototype of the network?
- How are the subcategories in the network related to the prototype and to each other?
- Which meanings are more common within a context for the various verbs (in other words, what are the ‘centers of gravity’ for the various verbs in the network)?
- To what extent does the context allow us to pick the right verb?

2. Data: four Russian trembling verbs

The present paper focuses on the following four Russian verbs: *трепетать* ‘*tremble*’, *дрожать* ‘*shiver*’, *трястись* ‘*shake*’, *вибрировать* ‘*vibrate*’. The verbs are distributed in the modern subcorpus of the Russian National Corpus as shown in Figure 1.¹ Notice, however, that this diagram is based on the modern subcorpus of the RNC, which is not completely disambiguated and can contain some noise (such as the noun *дрожь* ‘*tremble*’, which in the genitive case can be parsed incorrectly as an imperative form of the verb *дрожать*).

¹ All cited examples are taken from the Russian National Corpus (<http://www.ruscorpora.ru/>). The search was carried out in March 2016. At the time, the modern subcorpus of the RNC (from 1950 until today) contained 56 815 documents, 12 497 143 sentences, and 144 059 159 words.

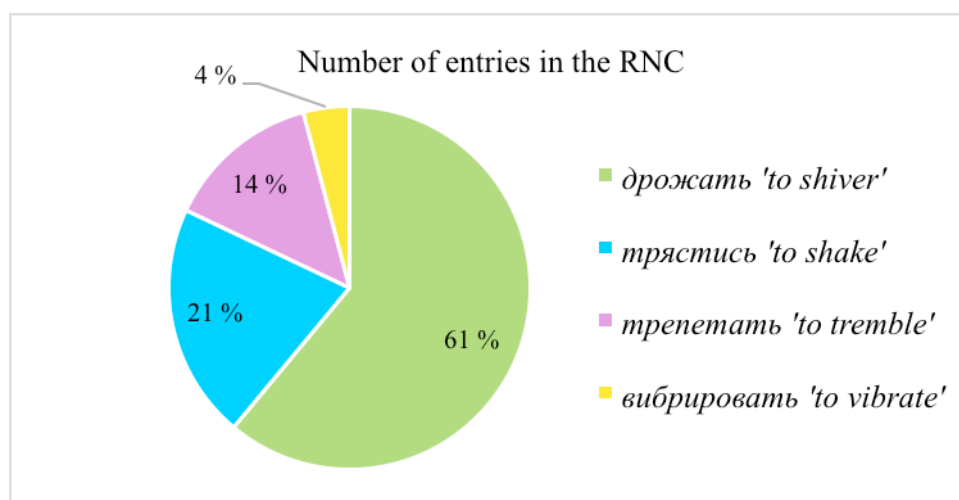


Figure 1: The distribution of the verbs in the RNC

All the verbs can be used in similar contexts to express, for example, the meaning ‘shake involuntarily as a result of a particular feeling or state (e.g. impatience)’, as shown in examples (1)–(4):

- (1) Оставался клуб [...], я трепетал от нетерпения, ожидая этого дня. [Анатолий Приставкин. Радиостанция «Тамара» (1994)]
‘The club remained [...], I was trembling of impatience, waiting for this day.’
- (2) А я прямо **дрожал от нетерпения**, мне очень хотелось, чтобы папа увидел, какая она необыкновенная в своём серебряном костюме. [Виктор Драгунский. Денискины рассказы. Девочка на шаре (1963)]
‘And I was shivering with impatience; I wanted my dad to see how extraordinary she was in her silver costume [...].’
- (3) Ну, давай, только по-быстрому! — Жоз трясся от нетерпения. [Валерий Попов. Ужас победы (2000)]
‘Go on, but hurry up! — Žoz shook with impatience.’
- (4) И не вступая более в споры с самим собой, тихо его открыл, **вибрируя от нетерпения...** [Дина Рубина. Белая голубка Кордовы (2008–2009)]
‘And not engaging in an argument with himself anymore, he quietly opened it, vibrating of impatience...’

3. A network of submeanings and quantitative analysis

I model the meanings of the verbs under scrutiny as a radial category network. Based on the analyzed examples and dictionary articles, the proposed network is presented in Figure 2. Each submeaning is labelled with a number and a short description of the subject of an action (the term ‘object’ here is used in the meaning ‘entity’ or ‘thing’, not implying any syntactic relationship). The links that join the rectangles indicate relations among the submeanings that will be discussed further.

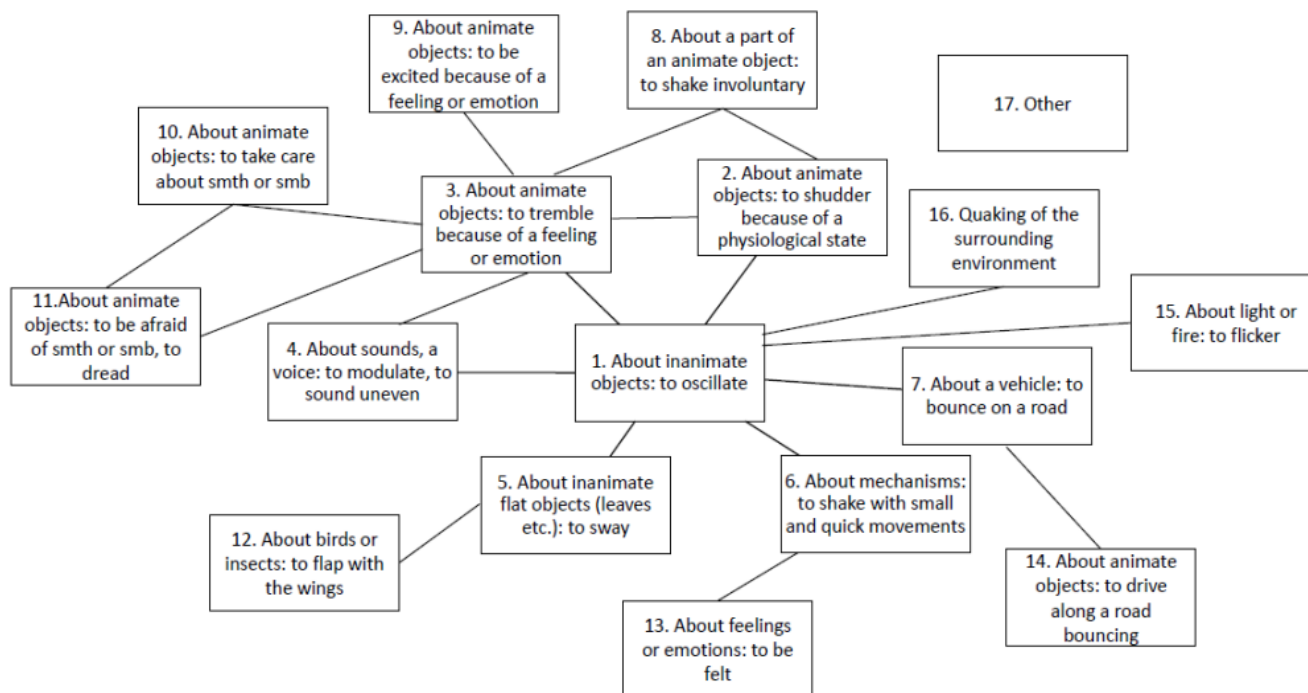


Figure 2: Radial Category network of the verbs' submeanings

The first submeaning (subcategory 1) serves as the prototype of the network and describes the trembling of an inanimate object under the influence of some external force, which can be expressed by means of a prepositional phrase, as shown in (5).

- (5) Земля под нами тряслась от глухих взрывов — это готовили грунт для ночной смены. [В. Т. Шаламов. Колымские рассказы (1954-1961)]
 ‘The ground below us was shaking from the deep explosions – the soil was being prepared for the night shift.’

This meaning is mostly connected to the others and motivate some of them; moreover, it is one of the most frequent meanings in the sample (see Section 3; for more detailed discussion of the prototype theory see Lewandowska-Tomaszczyk 2007). Analogous to other polysemic linguistic categories, such as prefixes that often have some basic spatial meaning as the prototype, the prototype of the radial category under scrutiny in the present study is “the most spatial one,” where the object and the driving force of oscillation are concrete objects of the real world. The prototypical meaning is closely related to subcategory 2 that characterizes the trembling of an animate subject due to some physiological state (6), which is perceived as the driving force:

- (6) И хоть изнывало оно от жажды, дрожало в ознобе, предвкушая как бы еще одно возможное, почти райское наслаждение: пить, пить! [Олег Павлов. Асистолия. «Знамя» (2009)]
 ‘Even though it suffered from thirst, shivered, as if anticipating another possible and almost heavenly delight: drink, drink!’

This meaning in turn gives rise to metaphorical extensions (subcategories 3, 9, 10 and 11) where a feeling or emotion of an animate subject is considered as the driving force, this time internalized and more abstract, as in (7).

- (7) И, сжимая в руке направление на рентген, Витя снова стоял на пороге зала, перед лицом своей прекрасной богини, трепеща от восторга и нежности. [Давид Дар. Богиня Дуня и другие невероятные истории (1964)]
 ‘So, squeezing the referral to an x-ray in his hand, Vitja was standing on the threshold of the hall at the face of his dearest goddess, trembling with delight and tenderness.’

Note that these metaphorical extensions often describe oscillation in a more figurative rather than direct sense, and that the links between the prototype and some peripheral meanings, e.g. subcategory 11 (to be afraid of something), may not seem obvious. Subcategories 4 (voice modulation) and 8 (shake of *animate objects’ parts*) are connected to the abovementioned submeanings via metonymy based on part-whole relationships.

The remaining part of the network reflects different types of oscillation applied to particular groups of inanimate objects; the relationship between these groups and the prototype is also a case of metonymy. The groups comprise flat objects (leaves, pieces of fabric etc.), various mechanisms, vehicles, and flickering lights or fire (subcategories 5, 6, 7 and 15 respectively). These categories in turn motivate a variety of extensions to other subcategories. Thus, subcategories 12 (*about birds and insects: to flap with the wings*) and 13 (*about feelings or emotions: to be felt*) are metaphorically related to subcategories 5 and 6, respectively. Subcategory 14 (*about an animate object: to drive along a road bouncing*) connects to subcategory 7 (*about a vehicle: to bounce on a road*) via metonymy. Subcategory 16 (*quaking of the surrounding environment*) exemplifies situations where the vibration is felt in the outside world (mostly in a figurative sense), as shown in (8).

- (8) Ноябрьским днём, когда защищены от ветра только голые деревья, а всё необнажённое дрожит... [Михаил Абельский. Об одном стихотворении Бродского (2004)]
 ‘On one November day, when only stripped bare trees are protected from the wind, and everything vested is trembling...’ [Mikhlail Abelsky. About one poem by Brodsky (2004)]

All the remaining examples fall into the ‘Other’ category. As shown in (9) and (10), examples include metaphorical contexts and examples of the author’s use of figurative language that are hard to classify into any other category:

- (9) И я поняла, что ко мне на концерты приходят люди, которые вибрируют в тех же частотах, что и я. [Александр Клейн. Мама Даси, представитель Бога на земле // «Пятое измерение», 2003]
 ‘And I realized that people who attend my concerts are vibrating at the same frequencies as me.’
- (10) Торфяная туча навалилась на болота пухлым ржаным животом. Она редела и тряслась, как студень. От ударов грома осыпалась голубика. [Юрий Коваль. У Кривой сосны (1979)]
 ‘A peat cloud surrounded the swamps with its plump rye belly. It howled and shook like a meat jelly. Thunderclaps made the bog bilberries fall off.’

In order to create a representative database I analyzed 200 attestations of each verb (randomly extracted from the RNC), 800 sentences in total. The sentences were labelled with one of the meanings from the network in Figure 2. Table 1 and Figure 3 show the distribution of the four verbs among the 17 categories; cells where the given verb accounted for 50% or more of the data are shaded (‘inan.’ here stands for ‘inanimate’ and ‘an.’ — for ‘animate’).

As one can see from Figure 3, several verbs can be used to represent almost the same meaning. All four verbs are attested in 8 of 17 subcategories, three of the verbs — in 7 out of the 9 remaining categories. This shows that there is considerable overlap in the meanings of the verbs. However, it is also clear that different verbs have different centers of gravity in the network. For example, only the verb *трястись* ‘shake’ is attested in my sample in the meaning ‘to drive along a bumpy road’ (subcategory 14) as shown in (11). This fact does not mean that other verbs cannot be used in a similar context — it just means that *трястись* is the preferred one in this case.

- (11) Впрочем, в вынужденном одиночестве, в дальней дороге, трясясь по российским ухабам, он начинает говорить с тем, пред кем следовало бы вообще-то хранить молчание — silentium, — а он все-таки говорит. [Лев Аннинский. Бессильный ясновидец // «Дружба народов», 2003]
 ‘However, in the forced solitude, on a long journey, jolting over Russian pits and bumps, he starts to talk to the one he should remain silent with — silentium, — but he nevertheless speaks.’

| N° | Meaning | <i>дрожать</i> | <i>трястись</i> | <i>трепетать</i> | <i>вибрировать</i> | Total |
|-------|--------------------------|----------------|-----------------|------------------|--------------------|------------|
| 1 | inan. object oscillation | 17 (23%) | 13 (18%) | 5 (7%) | 39 (53%) | 74 (100%) |
| 2 | physiological shudder | 22 (35%) | 24 (39%) | 12 (19%) | 4 (6%) | 62 (100%) |
| 3 | emotional tremble | 30 (37%) | 26 (32%) | 16 (20%) | 9 (11%) | 81 (100%) |
| 4 | sounds & voice tremble | 25 (34%) | 0 (0%) | 4 (5%) | 44 (60%) | 73 (100%) |
| 5 | flat objects sway | 3 (6%) | 0 (0%) | 41 (85%) | 4 (8%) | 48 (100%) |
| 6 | mechanisms shake | 2 (5%) | 2 (5%) | 1 (3%) | 34 (87%) | 39 (100%) |
| 7 | vehicle bounce on road | 0 (0%) | 8 (89%) | 0 (0%) | 1 (11%) | 9 (100%) |
| 8 | body part trembling | 61 (34%) | 86 (48%) | 20 (11%) | 11 (6%) | 178 (100%) |
| 9 | an. object excitement | 2 (4%) | 6 (13%) | 33 (72%) | 5 (11%) | 46 (100%) |
| 10 | an. object: take care | 3 (23%) | 6 (46%) | 4 (31%) | 0 (0%) | 13 (100%) |
| 11 | an. object: to be afraid | 0 (0%) | 8 (24%) | 23 (68%) | 3 (9%) | 34 (100%) |
| 12 | to flap with the wings | 1 (5%) | 0 (0%) | 14 (67%) | 6 (29%) | 21 (100%) |
| 13 | emotion: to be felt | 1 (13%) | 0 (0%) | 2 (25%) | 5 (63%) | 8 (100%) |
| 14 | an. bounce on road | 0 (0%) | 17 (100%) | 0 (0%) | 0 (0%) | 17 (100%) |
| 15 | light & fire flickering | 15 (52%) | 0 (0%) | 12 (41%) | 2 (7%) | 29 (100%) |
| 16 | surroundings quake | 8 (30%) | 1 (4%) | 4 (15%) | 14 (52%) | 27 (100%) |
| 17 | other | 10 (24%) | 3 (7%) | 9 (22%) | 19 (46%) | 41 (100%) |
| Total | | 200 (100%) | 200 (100%) | 200 (100%) | 200 (100%) | 800 (100%) |

Table 1: Number of verbs in each category

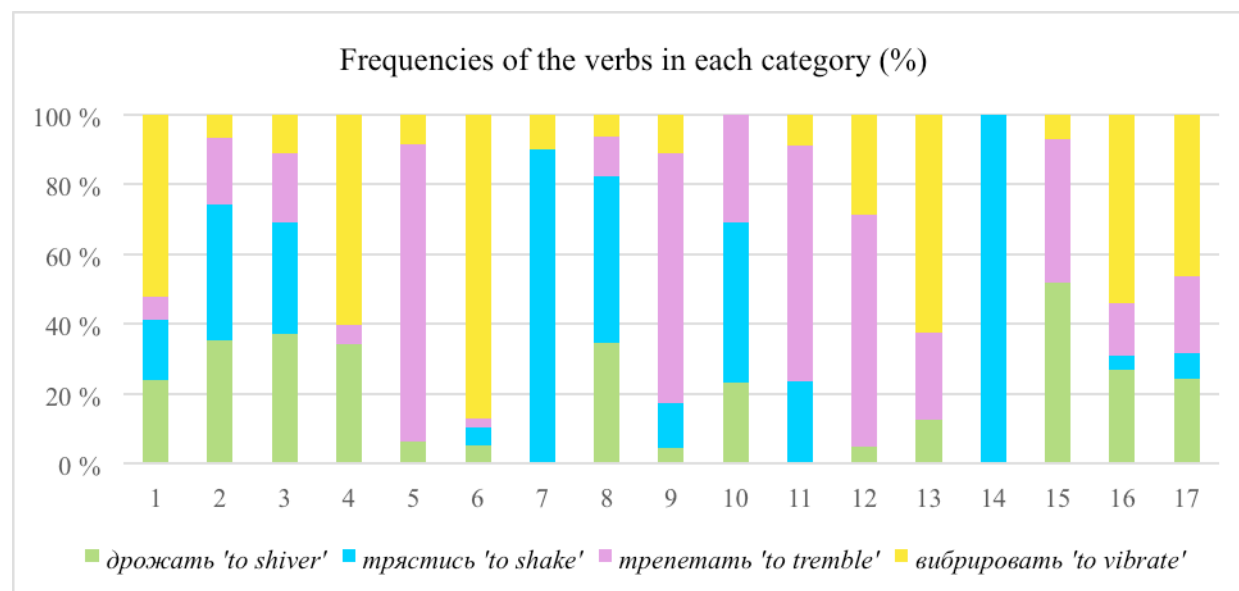


Figure 3: The distribution of the verbs among the categories

Moreover, it is always problematic to make any assumptions about the impossibility of using one or another verb based on a limited sample of examples. For instance, Ožegov and

Švedova (1999) remark that the subject of *вибрировать* ‘vibrate’ cannot be in the first or second person, although examples like (12) can be found in the corpus:

- (12) — Не вибрируй, ничего страшного, — сказал почти вслух, потому что почувствовал, что его начинает трясти, как малярика. [Владимир Корнилов. Демобилизация (1969-1971)]
 ‘— Don’t vibrate, it’s nothing, — he said almost out loud, because he felt that he began to shake, like a person infected with malaria.’

The examples discussed above and the distribution of the verbs among the categories emphasize that results obtained from a random sample show tendencies rather than strict rules. We turn to a discussion of these tendencies in the next section.

3.1 *The verb дрожать ‘shiver’*

This verb is the most frequent one among the four. As may be concluded from Figure 3, it can be used in almost all submeanings in the network (except for subcategories 7, 11 and 14), and in most of the cases it does not have any ‘preferred contexts’. It is only slightly preferred over the others in the meaning ‘to flicker (about light or fire)’ (subcategory 15). This makes *дрожать* a kind of a “default option” for trembling in Russian, which may be useful information for students learning Russian as a foreign language.

It also should be noted that 50% of the attestations of *дрожать* in the ‘Other’ category (subcategory 17) contain the idiomatic expression ‘*тварь дрожащая*’ (lit. ‘trembling creature’) from Dostoevskij’s famous novel *Crime and Punishment*: *Тварь ли я дрожащая или право имею?* (‘Am I a trembling creature, or do I have the right?’). This has already become a fixed expression that can be used in examples like (13), where no physical oscillation is presupposed:

- (13) Тварь дрожащая, у которой есть неотъемлемые права. [Виктор Пелевин. Generation «П» (1999)]
 ‘A trembling creature that has inalienable rights.’

3.2 *The verb трястись ‘shake’*

Unlike the verb *дрожать*, *трястись* has its own centers of gravity in the network — subcategories 7 and 14 in particular. Moreover, this verb has a more restricted distribution than the others; it is attested only in 12 out of 17 categories. Subcategory 14 (*about an animate object, driving along a road, bouncing*) is metonymically related to subcategory 7 (*about a vehicle, bouncing on a road*). These subcategories represent a situation of driving along a road, where the cause of oscillation is surface imperfections. In subcategory 7, the subject of the verb is a vehicle, as in example (14), and in subcategory 14 — an animate entity that is jolting in a vehicle along a bumpy road, as in (15). The relationship between the vehicle and

the person in the vehicle is an example of metonymy based on a content-container contiguity relationship.

- (14) Дорога, по которой трясся автобус, отличалась от той, что вела через пустыню к водохранилищу.
‘The road where the bus was jolting was different from the one that went through the desert to the reservoir.’
- (15) Мы целый день тряслись в грузовике сначала вдоль пограничной реки Пяндж, потом по долине реки Андероб — по узкой горной дороге, прижавшейся к крутым склонам серых и рыжих скал. [В. Чубуков. Гарм-чашма // «Химия и жизнь», 1970]
‘We jolted in a truck all day long, first along the frontier river Pyange, then through the Anderob river valley — along a narrow mountain road that went close to the steep slopes of grey and red rocks.’

3.3 The verb *трепетать* ‘tremble’

This verb is attested in 15 out of 17 categories and has a high number of preferred contexts compared to the other verbs. It is used most frequently in the related subcategories 5 (*flat objects sway*) and 12 (*to flap with the wings*), as illustrated in (16) and (17).

- (16) Написанные в две строки, они воспринимались как трепещущие на ветру лозунги. [Виктор Слипенчук. Зинзивер (2001)]
‘Written in two lines, they were perceived as slogans, fluttering in the wind.’
- (17) Черные концы чайчьих крыльев трепетали возле самых крыльев мостика. [Виктор Конецкий. Начало конца комедии (1978)]
‘The black seagulls’ wing tips fluttered near the bridge wings.’

Notice that a part of this verb’s attestations deals with trembling in a figurative sense. Thus, 72% of the examples in subcategory 9 (*about an animate object or its parts: to be excited because of a feeling or emotion*) involve this verb. Arguably, no physical motion is presupposed in examples in this category, such as (18).

- (18) И дело не только в словах «национализация» и «конфискация», заставляющих трепетать сердце всякого коммуниста.
‘And it is not only the words “nationalization” and “confiscation” that make every communist’s heart tremble.’

Moreover, subcategory 11 that covers the meaning ‘*to be afraid of something or somebody*’ is also best represented by *тrepенать*:

- (19) Иногда это срабатывало — трепеща пред светлым начальничьим ликом, сотрудики вылезали из кожи вон, создавали на пустом месте целые

программы и резво их воплощали в жизнь. [Татьяна Устинова. Персональный ангел (2002)]

‘Sometimes it worked out — trembling at the radiant face of their boss, the employees went out of their way to create whole programs out of a clear blue sky and put them sprightly into life.’

3.4 *The verb* вибрировать ‘vibrate’

This verb is less frequently attested in the RNC than the others, and it covers different senses such as subcategories 6 (*mechanisms shake*) and 13 (*about a feeling or emotion: to be felt*). In examples like (20) the subject of an action — some type of a mechanism — is shaking with small quick movements in a way that is felt or heard rather than seen, and it gives rise to metaphorical extensions where a feeling or emotion is conceptualized in terms of vibration, such as (21).

- (20) В семь часов, в пик нагрузки, «вырубил». Стали пускать турбину — вибрирует. [Николай Амосов. Голоса времен (1999)]
 ‘At seven o’clock, at the peak load it went out. We began to start the turbine — it vibrates.’
- (21) В голосе Коли, когда он называл выпавшие кости или выкликал желанные, слышалось вибрирующее отчаяние. [Фазиль Искандер. Сандро из Чегема (1989)]
 ‘The vibrating despair could be heard in Kolja’s voice when he named the fallen dice or called out the wanted ones.’

Moreover, this is consistent with the observation that the verb *вибрировать* is used more frequently (in 60% of cases) to describe a voice or sound modulation as in (22).

- (22) Слегка вибрирующий голос позволял догадываться о неистовстве, породившем эти строки. [Эмма Герштейн. В Замоскворечье (1966–2002)]
 ‘The slightly vibrating voice enabled to guess about the rage, which has had engendered these lines.’

It is also worth noting that some parts of the network are more frequently activated than others. Table 2 shows the type frequencies (raw numbers and percentages) for the categories in the whole sample. Figure 4 below shows the numbers of verbs in each category.

| N° | Meaning | Frequency (%) | N° | Meaning | Frequency (%) |
|----|--------------------------|---------------|----|--------------------------|---------------|
| 1 | inan. object oscillation | 74 (9.3%) | 10 | an. object: take care | 13 (1.6%) |
| 2 | physiological shudder | 62 (7.8%) | 11 | an. object: to be afraid | 34 (4.3%) |
| 3 | emotional tremble | 81 (10.1%) | 12 | to flap with the wings | 21 (2.6%) |
| 4 | sounds & voice tremble | 73 (9.1%) | 13 | emotion: to be felt | 8 (1%) |
| 5 | flat objects sway | 48 (6%) | 14 | an. bounce on road | 17 (2.1%) |
| 6 | mechanisms shake | 39 (4.9%) | 15 | light & fire flickering | 29 (3.6%) |
| 7 | vehicle bounce on road | 9 (1.1%) | 16 | surroundings quake | 27 (3.4%) |
| 8 | body part trembling | 178 (22.3%) | 17 | other | 41 (5.1%) |
| 9 | an. object excitement | 46 (5.8%) | | Total | 800 (100%) |

Table 2: Type frequencies of the subcategories

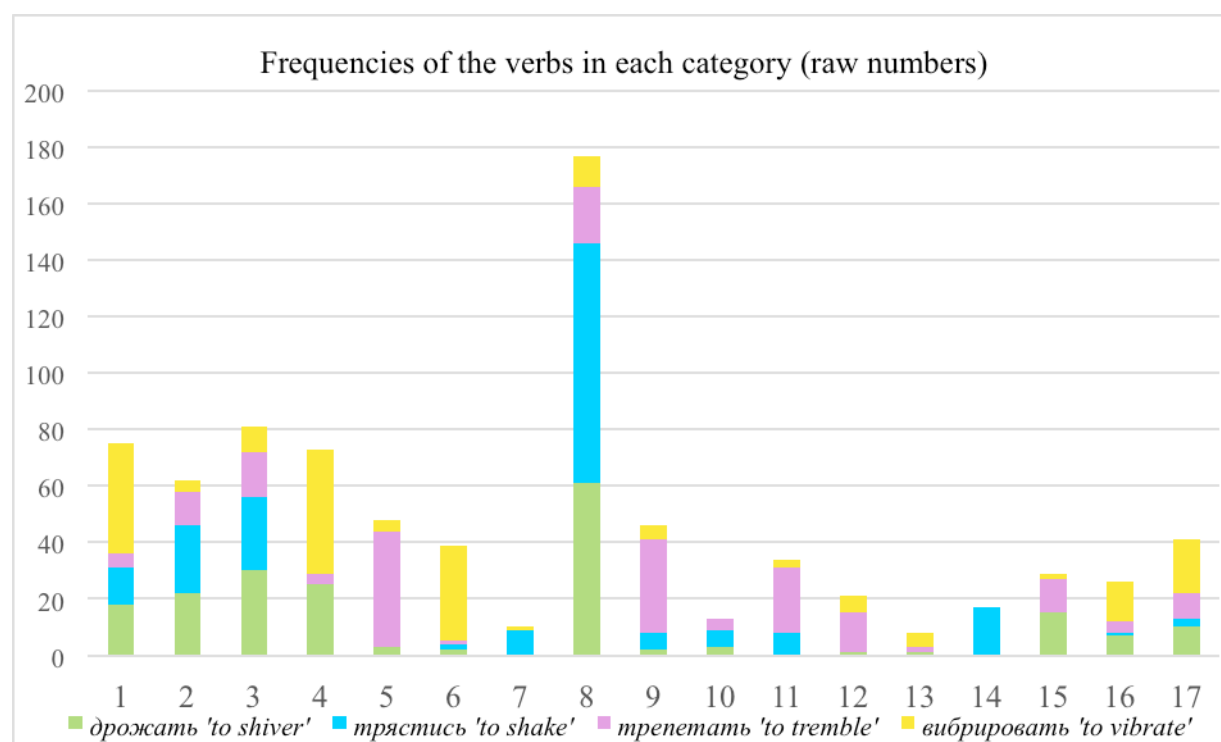


Figure 4. Frequencies of the verbs in each category

4. Summary of the results

In this paper I have analyzed the use of the four Russian trembling verbs and proposed a radial category network of their meanings. It should be noted that the network does not have rigid boundaries, which is why the category 'Other' is present. It has been shown that *дрожать* 'shiver' conveys a wide range of senses and can be used in almost all contexts, while the other verbs have their own specialized meanings. Thus, the verb *трястись* 'shake' is preferred in contexts where an animate object or a vehicle is driving along a road, bouncing. The verb *трепетать* 'tremble' is frequently used to describe flat objects' swaying and birds flapping with their wings. In addition, this verb covers such figurative senses as *to be afraid of something or somebody* and *to be excited because of a feeling or emotion*. Finally, the verb *вибрировать* 'vibrate', which has fewer attestations in the RNC, is used in context where the vibration is felt or heard rather than seen, such as mechanisms shaking and the modulation of voices and sounds. This verb furthermore has its own specialized meaning

about a feeling or emotion: to be felt. The analysis of the radial category network revealed some general tendencies, but more detailed investigation of other properties of the verbs (e.g. grammatical properties such as aspect, use of prepositions and etc.) is needed. However this task is left for future research.

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