

Case and Copular Sentences in Heritage Speakers of Russian

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ABSTRACT

This study investigates the grammatical abilities of heritage speakers of Russian with regard to their use of grammatical case in copular sentences. In the present tense, the only grammatical construction has the predicate in the Nominative case. However, in the past and future tenses, some baseline speakers will accept it in either the Instrumental or Nominative case, alternating based on semantic context. This study seeks to answer two questions. First, can Heritage speakers of Russian correctly use case forms in the present tense, where only one is grammatical? Second, in past and future tenses, do they select one over the other based on semantic context in the same way as baseline speakers? The results show that there is indeed a statistically significant difference between heritage and baseline speakers of Russian, indicating that the interaction of syntax and semantics may be an area of particular difficulty for heritage speakers.

KEYWORDS heritage language · heritage speakers · case alternation · copular sentences

1 INTRODUCTION

The current study investigates the language abilities of heritage speakers of Russian with regard to predicate case alternation. Heritage speakers and heritage languages have been on the rise as a topic of interest in recent decades. The language variety spoken by heritage speakers is different from both baseline speakers and second language learners, though it shares some characteristics with both (Rakhilina et al. 2014). This paper explores the linguistic abilities and knowledge of higher-proficiency heritage speakers, specifically with regard to the phenomenon of predicate case alternation in Russian copular sentences based on semantic context. Both areas of interest, those being the abilities of high proficiency heritage speakers and the interaction of syntax and semantics, are relatively understudied in the field, hence the topic of this study. Such research can be used to further explore the nature of language acquisition, loss, and re-learning, and more practically, to assist high proficiency heritage speakers who wish to strengthen their language skills by examining less obvious areas of potential difficulty. Background information on heritage speakers, copular sentences, and predicate case alternation in Russian is given in §2. §3 outlines the methodology of the study, and the results are presented in §4. The findings are discussed in §5, and summarized in the conclusion in §6. Ultimately, the data does show a statistical difference between heritage speakers of Russian and other native speakers in how tense and context affect their choice of predicate case in copular sentences. This is evidence that syntactic variation based on semantic context may be an area of difficulty for heritage speakers.

2 BACKGROUND INFORMATION AND RESEARCH QUESTIONS

This section provides an overview of heritage speakers and heritage language, copular sentences, and predicate case alternation in Russian copular sentences.

2.1 HERITAGE SPEAKERS

The narrow definition of “heritage speaker”, popularized by Maria Polinsky (2007, etc), describes an individual for whom the heritage language is a native language (the first or one of the first to be acquired, spoken at home), but is not the dominant language of the broader community, and is eventually supplanted as the individual’s dominant (most frequently and comfortably used) language (Polinsky & Scontras 2019:2). Many heritage speakers are children of immigrants or speakers of endangered languages, and their heritage language patterns differently than those learning the language as an L2 later in life, while also differing from non-heritage native speakers, for whom that same language remains primary and dominant (Montrul 2023:400). The latter group, when contrasted with heritage speakers, are referred to as baseline or monolingual speakers (Polinsky 2018:10).

There are a number of factors affecting language development that result in significant variation among heritage speakers in proficiency and the degree to which they exhibit the typical characteristics of heritage language. Many authors prefer to focus more on lower-proficiency heritage speakers in their research, as they are the ones who contrast most visibly with baseline speakers, although this is less true in the comparative variationist approach to heritage language studies, which does not rely on linguistic performance as a defining characteristic, focusing only on an individual’s linguistic autobiography (Nagy & Petrosov 2024:24). This study, while taking an experimental approach, focuses on higher proficiency heritage speakers, identified as such using their personal language history, who have a fairly strong grasp of the basics of Russian grammar, but who may still differ in some ways from baseline speakers when speaking their heritage language. It should also be noted that due to the limitations on the format of this study (see §3), it is not possible to compare each individual’s language abilities to the specific variety of the language they were exposed to (the baseline rather than the standard variety); therefore, by necessity, standard modern Russian is treated as the reference point for the data analysis.

Despite the variation in proficiency, there are several common characteristics found in heritage languages. The three main reasons for differences between heritage grammars and baseline (or standard) grammars are transfer, attrition, and divergent acquisition (Polinsky 2018:18). Transfer from the dominant language is a common phenomenon in any kind of language contact, and can result in, for instance, heritage speakers having difficulty with their language’s level of inflection, or a preference for certain word order. Attrition describes the loss of language ability over time due to the difficulty of maintaining a minority language in a society with few or no other speakers of the minority language nearby. Divergent acquisition is a systematic restructuring of the baseline grammar, arising due to differences in the input, insufficient quality and quantity of input, resource constraints, and a fallback on universal principles of language design.

All three of these factors affect individual speakers and parts of the grammar to different extents. Generally, heritage speakers’ strong suit in their heritage language is aural comprehension, while morphology and syntax tend to pose heritage speakers more difficulty (Polinsky & Kagan 2007:17). Morphological paradigms are often over-regularized. In heritage Russian, for instance, the complexity of case marking (such as patterns of homophony that differ between noun classes) often results in morphological leveling, particularly in speakers whose primary language does not have as robust a case-marking system, such as English (Nagy & Petrosov 2024:2). In fact, case marking is particularly vulnerable in heritage languages and often results in a reliance on word order to encode grammatical relations, leading to a loss of word order flexibility (Montrul 2023:403). Functional morphology (and internal interfaces between morphosyntax and semantics) has been speculated to be a particular challenge or bottleneck, for both L2 learners and heritage speakers, posing more difficulty than the acquisition of syntax or semantics for a number of reasons (Mikhaylova 2018:279).

2.2 CASE AND COPULAR SENTENCES IN RUSSIAN

Russian has six major cases (Nominative, Accusative, Genitive, Dative, Prepositional, and Instrumental) which can be assigned structurally, based on the position of an NP in a sentence, or lexically, by a lexical item which arbitrarily selects a specific case for its complement (Bailyn & Rubin 1991:99). These case-assigning items include verbs, prepositions, and copulas. A copula is an element which links the subject (NP) to a complement or predicate (NP, AP, or PP) which says something about the subject. The copula can take a variety of forms depending on the language, but even when it has a verb-like form, it tends to differ from full verbs in behaviour and function (Citko 2011:756). In languages with overt case marking, the predicate of copular sentences is usually marked with either the same case as the subject (known as Case agreement), or with a specific predicate case, such as the Instrumental in Russian (Matushansky 2009:6).

Copular sentences can be used to describe the identity, existence, or property of the subject of the sentence, and as such can be divided into a number of categories. Higgins (1979) classifies copular sentences into four categories: predicational (where the complement assigns some property to a referential subject), specificational (where the subject is a non-referential domain and the complement is a referential member of that domain), equative (used to establish a shared identity between two individuals as equally referential NPs.), and identificational (used to point out or teach the identity of someone/something, where a demonstrative provides the referent and the second NP provides the referent's identity) (Arche et al. 2018:7). Higgins (1979) provides the following English examples for each category:

- | | | | |
|-----|----|---------------------------|---|
| (1) | a. | John is a lawyer. | (Predicational, the predicate is an NP) |
| | b. | John is smart. | (Predicational, the predicate is an AP) |
| | c. | John is in court. | (Predicational, the predicate is a PP) |
| (2) | | The best student is Mary. | (Specificational) |
| (3) | | Cicero is Tully. | (Equative) |
| (4) | | That place is Boston. | (Identificational) |

Other authors have argued for alternative typologies, with more or fewer categories (Citko 2011:756). For instance, Mikkelsen (2005) argues that what Higgins calls identificational clauses should be split into two different sub-categories and grouped with either specificational or equative clauses. This results in a three-way classification where the difference lies in the type of arguments each clause takes. In formal semantics terms, where $\langle e \rangle$ is an entity (a specific individual) and $\langle e, t \rangle$ is a predicate (a function which returns true if the entity belongs to a given domain), predicational clauses take a subject of type $\langle e \rangle$ and complement of type $\langle e, t \rangle$, specificational clauses take an $\langle e, t \rangle$ subject and an $\langle e \rangle$ complement, and equative clause takes two $\langle e \rangle$ arguments (Mikkelsen 2005:50). A comprehensive exploration of the topic of copula categorization is beyond the scope of this paper, but some distinction, specifically (following the analyses of Pereltsvaig 2007 and others) between predicational and equative sentences, is useful in analyzing a particular phenomenon in Russian copular sentences, as can be seen in the following section.

2.3 PREDICATE CASE ALTERNATION

The Russian copula is the verb *byt'* 'to be', which has a past form (*byl-*, with suffixes that depend on gender and number) and a future form (*bud-*, suffixes depend on number and person) but is phonologically null ($\emptyset$, orthographically written as “-”) in the present. In the present tense, the predicate can only appear in the Nominative (agreeing in case with the subject):

- (5) Saša – pisatel'.
 saša.NOM be.PRS writer.NOM
 'Saša is a writer.'

When an overt copula is present, the default predicate case is the Instrumental, which is why the majority of past and future copular sentences have an Instrumental predicate (Matushansky 2009:6). However, alternation between Instrumental and Nominative predicates is allowed. In isolation, an Instrumental predicate in a copular sentence is unmarked and semantically neutral, but when the Nominative and Instrumental alternate, their juxtaposition indicates an additional semantic difference, with one being contextually more appropriate in a given discourse. Examples of both constructions in the past tense are in (6), and in the future tense in (7).

- (6) a. Saša byl pisatel'.
 saša.NOM be.PST writer.NOM
 'Saša was a writer.'
 b. Saša byl pisatel'em.
 saša.NOM be.PST writer.INS
 'Saša was a writer.'
- (7) a. ?Saša budet pisatel'.
 saša.NOM be.FUT writer.NOM
 'Saša will be a writer.'
 b. Saša budet pisatel'em.
 saša.NOM be.FUT writer.INS
 'Saša will be a writer.'

Future constructions with Nominative predicates, as in (7-a), may be borderline grammatical for some speakers, due to this being by far the least common combination of tense and case. Individual speakers of Russian may vary as to how acceptable they find this construction, though the native speakers who were consulted during the writing of this paper agreed that it is acceptable, albeit highly limited. The infrequency of future-Nominative constructions can be seen in a cursory look at the Russian National Corpus (ruscorpora.ru), which consists of more than three million syntactically tagged words. When searching for a Nominative noun followed by a past or future tense copula, followed by a Nominative or Instrumental noun, the combination of past tense and Nominative yields 10,275 samples, past tense and Instrumental has 17,701, future tense and Nominative has 371, and future tense and Instrumental has 1,177; though these results are likely incomplete as an in-depth corpus study is beyond the scope of this paper. In the literature on predicate case alternation in Russian, future constructions with Nominative predicates seem to be something of an oversight, as many authors either do not discuss the possibility at all (e.g. Bailyn 2001, Matushansky 2009) or simply dismiss it as ungrammatical (Markman 2008:188). In this paper, future copular sentences with Nominative predicates will be treated as grammatical, though infrequent, and requiring particularly strong motivation to occur.

The primary reason for contrasting Nominative and Instrumental predicates, described in Bailyn & Rubin (1991) and others, is semantic/pragmatic. The two types of predicates are interpreted differently in relation to the subject: an Instrumental predicate is associated with a property that is more temporary, transient, or changeable, while a Nominative predicate is associated with one that is more inherent or permanent. This can be clearly seen in examples such as (8) below (adapted from Bailyn & Rubin 1991:120). In (8-a), the predicate *ženšina vysokogo rosta* 'tall woman' is understood as being an inherent property of the subject, unlikely to change over time, and the past tense of the sentence is not interpreted as implying that this condition was only true at some point in the past. In (8-b), on the other hand, the predicate *studentkoj* 'student' is a property that was true of the subject at some time in the past, but no longer is, which is further

supported by the temporal modifying phrase *v prošlom godu* ‘last year’. As expected, the predicate in (8-a) is Nominative, and the predicate in (8-b) is Instrumental.

- (8) a. Tatjana byla ženšina vysokogo rosta.
Tatjana.NOM be.PST [woman tall height].NOM
‘Tatjana was a tall woman.’ (Inherent)
- b. V prošlom godu Tatjana byla studentkoj.
in previous year Tatjana.NOM be.PST student.INS
‘Last year, Tatjana was a student.’ (Temporary)

Pereltsvaig (2007) links this distinction to the types of copular sentences and arguments thereof. In constructions with an Instrumental complement of the copula which denotes a temporary property, the element in question is an argument of an $\langle e, t \rangle$ type, resulting in a predication copular sentence: the subject, of type $\langle e \rangle$ (entity), is said to belong to a domain $\langle e, t \rangle$. By contrast, in constructions with Nominative predicates, the complement of the copula is another entity $\langle e \rangle$, which is understood as referring to the same referent as the subject. In the example in (9-a) below (Pereltsvaig 2007:7), the gnomes are an entity with an understood referent (fictional or not), and they belong to the domain of laborious creatures (along with any other laborious entities in the world). Conversely, in (9-b), the complement of the copula is another entity, which is understood as referring to the same referent (in this case, the individual Vladimir Ulyanov Lenin).

- (9) a. Gnomy byli suščestvami rabotjašimi.
gnomes.NOM be.PST [creatures laborious].INS
‘(The) gnomes were laborious creatures.’ (Predicational)
- b. Lenin byl Vladimir Uljanov.
Lenin.NOM be.PST [Vladimir Ulyanov].NOM
‘Lenin was Vladimir Ulyanov.’ (Equative)

While not all real-life examples are as clear cut as (8) and (9), the general principles seem to hold for most native speakers of Russian; that being, the association of Nominative predicates with inherent properties and equative statements, and Instrumental predicates (when used contrastively) with temporary properties and predication statements. As Markman (2008:188) puts it, “[w]hile these labels are vague and subject to counterexamples[...], they do capture native speakers’ intuitions concerning the meaning of [these] constructions”.

This sort of distinction can, for instance, be employed in the domain of professions and occupations, where the subject is an individual and the predicate is a job or hobby that that person does (recall examples (5)-(7) above, describing Saša the writer). In these situations, a subject’s attitude to their profession (or the perception of an observer) can determine how relevant the property is to the individual being discussed. Some jobs may feel temporary, just something one must do for money or some other practical reason, done casually, passively, or with a level of detachment. Other types of work can feel inherent, something one is passionate about, or is driven to do because it is in their nature. One can be a writer (*pisatel’em*, INS) by necessity, someone who finds themselves in positions where they do a lot of writing, or one can be a writer (*pisatel’*, NOM) by nature, someone who can’t help but write and considers being a writer a key part of their identity.

This phenomenon of predicate case alternation can be visualized as a paradigm of possible constructions where the tense and semantic context of a sentence determine which case is grammatical and most appropriate for a given sentence. Since there is only one possible construction in the present tense, the copular inherent sentence can be contrasted with a near-synonymous verbal sentence using the copula-like verb *rabotat’* ‘to work as’ to fill in the cell for temporary property and present tense. This is only semantically equivalent to the other sentences as long as the predicates are limited to professions, which is how the stimuli used in this study are formatted. The inclusion

Table 1: Predicate case paradigm with five copular constructions and one verbal construction.

	Semantic context: inherent property	Semantic context: temporary property
Past tense	Saša byl pisatel' saša.NOM be.PST writer.NOM 'Saša was a writer.'	Saša byl pisatelem saša.NOM be.PST writer.INS 'Saša was a writer.'
Present tense	Saša – pisatel' [*pisatelem] saša.NOM be.PRS writer.NOM/*INS 'Saša is a writer.'	Saša rabotaet pisatelem [*pisatel'] saša.NOM be.PRS writer.INS/*NOM 'Saša works as a writer.'
Future tense	Saša budet pisatel' saša.NOM be.FUT writer.NOM 'Saša will be a writer.'	Saša budet pisatelem saša.NOM be.FUT writer.INS 'Saša will be a writer.'

of *rabotat* 'to work as' as a present tense Instrumental option is done to balance the amount of expected Instrumental responses in the results with Nominative and so that participants see an equal number of stimuli with each type of context. All of the possible constructions can be seen in the table below:

2.4 RESEARCH QUESTIONS

This study aims to answer two questions about high-proficiency heritage speakers of Russian. First, can they use the correct (grammatically acceptable) cases in all of the constructions shown in Table 1? Second, in structures where either Nominative or Instrumental case is acceptable (ie, in past and future copular sentences), do heritage speakers use context to decide between them in the same way as baseline speakers? Together, these questions seek to discover whether heritage speakers exhibit case alternation in a similar manner to baseline speakers, and, if they do, whether the alternation is triggered by the same semantic context, or if it may be more arbitrary or affected by other factors.

If a difference between heritage and baseline speakers is found, that would indicate that case alternation in copular sentences is an area of difficulty for heritage speakers, and it can then be targeted for improvement in those who wish to develop their Russian language skills for any reason. Heritage languages are often directly tied to one's sense of identity and personal history, and therefore, a perceived sense of attrition of the heritage language "may lead to the desire to revitalize one's connection with one's native country, its population and the original identity" through fluency in the heritage language (Venturin 2019:255). Other heritage speakers may have more practical motivations for improving their language skills, such as the necessity of communication with other speakers of the language in one's personal or professional life. Despite this, materials for language educators that focus on heritage speakers are often unavailable or limited, making it difficult for educators to know how best to approach such a population in the classroom (Nagy & Petrosov 2024:206).

While this study does not investigate the process of improving one's heritage language later in life, it does expose a possible area of interest for future studies. Research on re-exposure and instruction in the heritage language has indicated some possibility of recovering grammar that has been partially acquired or lost, but the specifics of what can or cannot be regained remain up for debate (Montrul 2023:411). More broadly, this paper contributes to the literature on heritage speakers by focusing on high-proficiency heritage speakers, whose unique linguistic characteristics are often overlooked (Aleeva 2000, Peirce 2018). Finally, this study can help to shed light on a wider area of research into the semantic and pragmatic competence of heritage speakers, which is understudied compared to their skills in morphology and syntax (Polinsky 2018:291).

3 METHODOLOGY

This study tested participants' language knowledge using a forced-choice cloze task in the form of a survey with multiple-choice questions. Participants were presented with a number of sentences and asked to select the case form of the predicate that they felt best fit the rest of the sentence, with their options being Nominative case, Instrumental case, and a third case (usually Accusative, except for instances where the Accusative is syncretic with the Nominative, in which a distinct case such as the Genitive was used instead). All Russian sentences were constructed by the researcher and reviewed by three native Russian speakers to ensure that the stimuli were well-formed and relatively naturalistic.

3.1 STIMULI

A total of thirty-six stimuli were created, equally split among the tenses (twelve each for past, present, and future), gender of the subject (eighteen traditionally feminine given names, and eighteen traditionally masculine ones), and semantic context (eighteen with an inherent context and eighteen with a temporary one). The context is indicated in the stimuli using three types of additional content, two of which are used for each stimulus. The three types differ in the syntactic position of the added elements, which affects how they are declined: adjectives which modify the noun of the predicate, other types of modifying phrases, and additional sentences (see (10) below for examples). This variation in stimulus structure allows for some diversity in the items seen by the participants as they complete a somewhat repetitive task, while maintaining some consistency in the amount of information given for each item. Similarly, due to the number of unique stimulus items created, some may be clearer examples of the semantic distinction that triggers predicate case alternation than others. Not all sentences sound fully "natural" to all native Russian speakers, but the intended meaning should be evident, and content words are not repeated between items.

All of the sentences in the study are about professions. The subject of each sentence is a generic fictional individual with a common Slavic given name in its standard informal form, such as Kat'ja, Griša, or Art'jom. The predicate of each sentence is a noun indicating a profession or occupation, such as athlete, janitor, or translator. Again, due to the number of nouns needed to balance the conditions, some may be more generic or subjective than others. A sample of six items is given below in (10), showing multiple combinations of tense, gender of subject, and context, including how the context is indicated. A full list of the stimuli can be found in Appendix 6.1. Note that in these examples, only the grammatical case forms of the predicates are given (including the alternation in past/future), though participants were given three choices for the predicate case for each stimulus item.

- (10) a. Borja byl { nastojašij učjonyi / nastojašim učjonym
 Borja.NOM be.PST real scientist.NOM real scientist.INS
 } ot roždenija.
 from birth
 'Borja was a real scientist from birth.'
 (Inherent context (adjective and modifying phrase), past tense, male subject)
- b. U Dašy zolotoj golos. Ona Ø talantlivaja pevica.
 at Daša gold voice she.NOM be.PRS talented singer.NOM
 'Daša has a golden voice. She is a talented singer.'
 (Inherent context (sentence and adjective), present tense, female subject)
- c. Roma obožaaet čitať detektivy. On govorit, čto kogda vyrastet,
 Roma loves reading detective-novels he says that when grows

on budet { sledovatel' / sledovatelem }.
 he.NOM be.FUT detective.NOM detective.INS
 'Roma loves reading detective novels. He says that when he grows up, he
 will be a detective.'
 (Inherent context (sentence and modifying phrase), future tense, male
 subject)

- d. Maša vladela dvumja jazykami, no ploxo pereključalas' s odnogo na
 Maša had two languages, but badly switched from one to
 drugoj. Ona byla { slaboj perevodčicej / slabaja perevodčica }.
 other she.NOM be.PST weak translator.INS weak translator.NOM
 'Maša spoke two languages, but couldn't switch between them easily. She
 was a poor translator.'
 (Temporary context (sentence and adjective), past tense, female subject)
- e. Uže neskolko let Tjoma rabotaet sezonnym voditelem.
 already several years Tjoma.NOM works seasonal driver.INS
 'For a few years now, Tjoma has worked as a seasonal driver.'
 (Temporary context (modifying phrase and adjective), present tense, male
 subject)
- f. Saninomu djade nužna pomoš v ego novoj buločnoj. Po vyxodnym,
 Sanja uncle need help in his new bakery on weekends
 ona budet { pekarem / pekar' }
 she.NOM be.FUT baker.INS baker.NOM
 'Sanja's uncle needs some help in his new bakery. On the weekends, she
 will be a baker.'
 (Temporary context (sentence and modifying phrase), future tense, female
 subject)

The 36 stimuli sentences were mixed with 36 filler sentences, also split equally by tense and gender of subject, and similar to the stimuli in length. These sentences use a verb other than the copula (or the present tense of *rabotat'* 'to work as'), which can select for any of the three case options (Nominative, Instrumental, or Accusative/Genitive) for its predicate.

3.2 PARTICIPANTS

All responses were anonymous, from participants recruited by word-of-mouth and via recruitment invitations posted to Facebook and Reddit. The recruitment invitations specified the need for participants to speak both English and Russian, and respondents were encouraged to send the survey to other potential participants. A language background questionnaire was used to evaluate the proficiency levels of participants and to categorize each respondent as a heritage or baseline speaker. Participants were asked to self-evaluate their general Russian language skills and answer a number of questions about their personal language history, including whether or not Russian is the dominant (official) language of where they live and grew up, what language(s) they spoke at home in their childhood, whether or not they received instruction in the Russian language at any point, and what their use of the Russian language is like today. Based on these responses, participants were sorted into the two categories of heritage and baseline speakers.

After sorting through the responses to the questionnaire, 40 participants were selected whose responses were complete and easily classifiable. In total, there were 10 heritage speakers and 30 baseline speakers of Russian. Both groups of participants were very similar in terms of age and gender. For the heritage speakers, the average age was 31.4,

ranging from 19 to 47, and for baseline speakers, the average was 35.1, ranging from 18 to 67. The heritage speaker group included 4 men and 6 women, while the baseline speakers included 11 men, 18 women, and one participant who chose to not indicate their gender, resulting in both groups being 60% female.

Participants' language background and history were the primary factors used to classify them as heritage or baseline speakers. All of the heritage speakers stated that Russian is not the dominant/official language of where they currently live, and most (80%) did not grow up with Russian as an official language either. On the other hand, all of the baseline speakers grew up where the official language is either Russian (90% of the native speakers) or a closely related Slavic language such as Ukrainian (10%), and the majority (60%) still live in such areas. In cases where a move from a Russian-speaking area to a non-Russian speaking area was made, the move happened earlier for heritage speakers (10-12 years) than for baseline speakers (30 years on average, with the youngest at 17 years). Both groups started by speaking Russian (or, for one heritage and two baseline speakers, Ukrainian) at home from birth to about 10 years of age, though some heritage speakers (30%) started using a mix of Russian and the dominant language around 10 years.

Participants were asked to self-evaluate their Russian language skills to ensure that only high proficiency heritage speakers were selected. In the categories of oral production, oral comprehension, written production, and written comprehension, the average scores (out of 5) for the heritage speakers were 4.4, 4.9, 3.4, and 4.4 respectively, only slightly lower than the baseline speakers' averages of 4.9, 5, 4.9, and 4.9.

3.3 PROCEDURE

The data was gathered in the form of a written survey hosted on Qualtrics experience management software. Participants first completed the background questionnaire, followed by the language task, with the order of the sentences randomized for each participant. Instructions and language background questions were provided in both Russian and English. For the forced-choice cloze task, participants were presented with a Russian sentence with a blank space in the place of the predicate, the English translation with the predicate underlined, and a multiple-choice drop-down menu with three versions of the predicate that were identical except for the grammatical case (one being Nominative, one being Instrumental, and one being a third distinct case such as Accusative or Genitive). Participants were instructed to select the form of the predicate which, when inserted into the blank, would result in a sentence that sounded most natural to them.

Although participants were given three choices for the predicate case for every stimulus item, only Nominative and Instrumental are grammatical options for the copular sentences that are the topic of this study (see the examples in (10)). The third option was grammatical in some of the filler items, whose verbs are only known to select one predicate case in standard Russian and do not, to the author's knowledge, exhibit variation. Since all participants were fairly high proficiency Russian speakers, their results very rarely included an ungrammatical use of case (the occasional errors may be the results of mis-clicks or linguistic performance issues). While participants (correctly) used the Accusative/Genitive in filler items, these items were not part of the analysis, and participants only used the grammatical Nominative and Instrumental forms in the copular and near-copular sentences analyzed in this study. Therefore, the results in the following section make no further mention of the third form of the predicate, as despite being an available option, it was not grammatical and thus not selected.

4 RESULTS

The significant independent (predictor) variables are the tense of the stimulus item (past, present, or future), the context of the item (inherent or temporary), and the type of

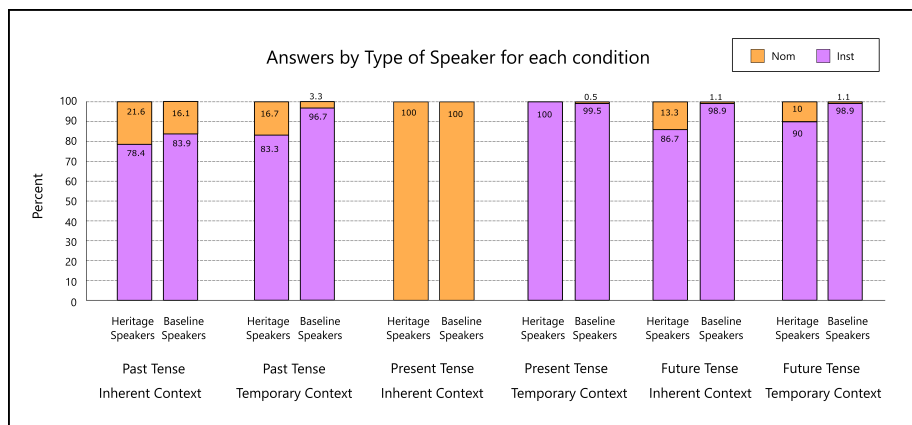


Figure 1: Bar graph comparing answers across the two participant groups for each condition

speaker (heritage ($N=10$) or baseline ($N=30$)). The dependent (outcome) variable is the participant's selection of the case of the predicate for each item. The results were analyzed using descriptive statistics as well as logistic regression in R Studio.

4.1 DESCRIPTIVE STATISTICS

The frequencies of Nominative and Instrumental answers from both groups of participants were compared using cross-tabulation analysis and bar graphs (based on percentages). The overall preference for the Instrumental in past and future sentences is due to the fact that it is the default predicate case for copular sentences. The frequency of Instrumental predicates does not necessarily indicate that participants interpret all of them as semantically temporary, as in many cases, they may not have found the given context strong enough to require the extra emphasis that is provided by case alternation. That said, Nominative answers do appear in past and future stimuli, indicating that both groups are aware and make use of predicate case alternation at least some of the time.

Figure 1 is a bar graph of all answers given by the two participant groups for each of the six conditions tested (three tenses by two contexts). As can be seen, both groups performed similarly in the two present tense conditions, since those constructions do not allow for predicate alternation regardless of context. The only exception is one instance of a baseline speaker selecting a Nominative predicate in a present tense temporary construction, which is likely just a performance error. In all of the past and future tense conditions, the Instrumental is the more common case, though Nominative is still present to varying degrees. The rest of this section will take a closer look at how the two groups of participants compare, both in general and when broken down by tense and context.

Next we can examine the overall results for the two participant groups. Figure 2 shows that heritage speakers selected the Nominative case slightly more often than baseline speakers (26.9% of the time compared to 20.4%) across all the stimuli. Possible explanations for this are discussed in §5.

Breaking these results down further, we can compare the answers the two groups give depending on tense and context, seen in Figure 3. The present tense has been discussed above (see Figure 1), and has thus been excluded. In both past and future tense, where either case is permissible, the Instrumental is still much more common. This difference is more pronounced for the baseline speakers (90.3% and 98.9%, compared to 80.8% and 88.3% for heritage speakers) and in the future tense (96.3%, compared to 87.9% in the past for both groups taken together, see Table (48) in the appendix). This discrepancy may be due to the nebulous grammaticality of Nominative predicates in future constructions. The logistic regression analysis presented in §4.2 confirms that the interaction of past

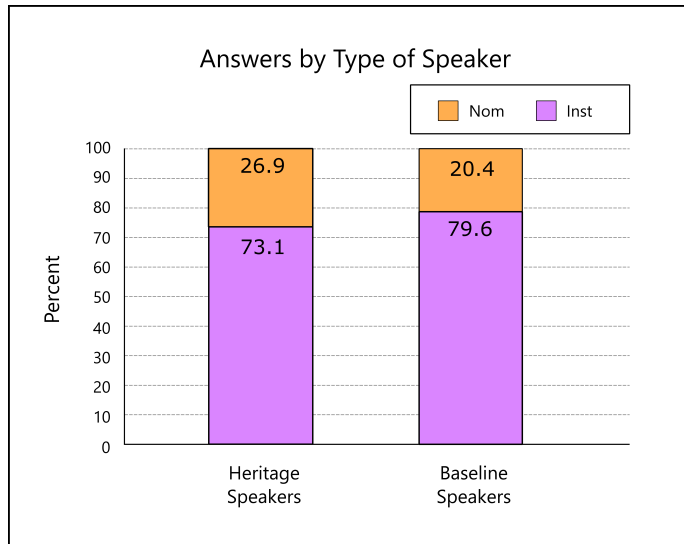


Figure 2: Bar graph comparing answers across the two participant groups

and future tense and type of speaker is statistically significant (P-value: 0.0158, see Table 2).

Finally, we can compare the effect of semantic context on the answers given by the two groups. Since context is not relevant for case selection in the present tense, the present tense is once again excluded from this comparison. Figure 4 shows that in past and future tenses, where case alternation is possible, all of the participants are more than twice as likely to select the Nominative when the context given is inherent (10.8% Nominative in the inherent context, compared to 5% in the temporary). This difference is more pronounced in the baseline speakers, though the numbers overall are smaller (for baseline speakers, the inherent 8.6% is nearly four times the temporary 2.2%, while for heritage speakers, the inherent 17.5% is about 1.3 times as many as the temporary 13.3%). Once again, the logistic regression analysis in §4.2 confirms that the interaction of context and type of speaker is statistically significant (P-value: 0.0364, see Table 2).

4.2 LOGISTIC REGRESSION ANALYSIS

The data was analyzed using a generalized mixed effect logistic regression model in R, using the function `glmer`. The goal of this model is to predict the log odds of the instrumental case being selected in a given situation, based on the independent variables. The variable of tense is split into two binary variables in order to account for the differences among all three tenses (Tense 1 distinguishes between past and present, and Tense 2 distinguishes between past and future). The fixed effects of the variables and interactions in the logistic regression model are shown in the table below.

Aside from the intercept, there are two statistically significant factors. The interaction of Group and Context has a P-value of 0.0364, and the interaction of Group and Tense 2 (which accounts for the difference between past and future) has a P-value of 0.0158. This shows that both context and tense have a different effect on the two groups of participants. Specifically, baseline speakers are less likely to select Nominative when the tense is future and the context is temporary, which is the same finding as was noted in §4.1. The implications of these results are discussed in §5.

This study did not find a significant main effect of Group, Context, or Tense, nor any significant three-way interactions.

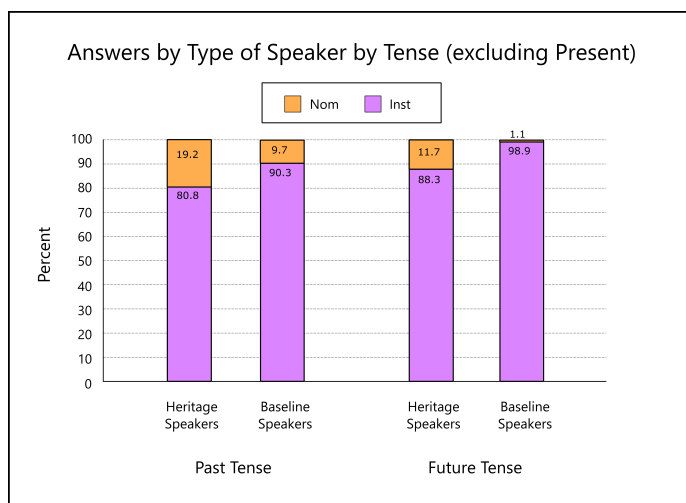


Figure 3: Bar graph comparing answers for the two participant groups in the past and future

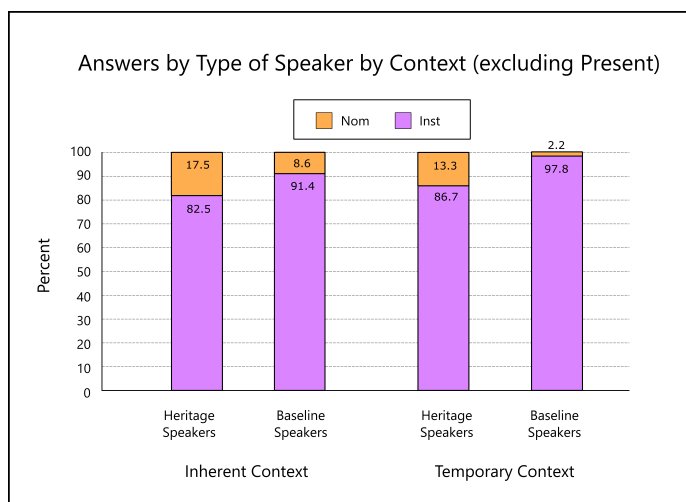


Figure 4: Bar graph comparing answers for the two participant groups and the two semantic contexts in the past and future

Table 2: Fixed Effects of the mixed effects logistic regression model. * indicates interactions.

	Variable	Estimate (Beta)	Standard Error	Significance (P value)
1	Intercept (constant)	1.88219	0.67511	0.0053
2	Group	0.62924	0.79560	0.4290
3	Context	0.46083	0.55200	0.4038
4	Tense 1	-21.69547	2056.05962	0.9916
5	Tense 2	0.82263	0.58080	0.1567
6	Group * Context	1.57864	0.75428	0.0364
7	Group * Tense 1	0.96780	2135.78830	0.9996
8	Group * Tense 2	2.39697	0.99346	0.0158
9	Context * Tense 1	41.53421	5042.10779	0.9934
10	Context * Tense 2	-0.02786	0.85970	0.9742
11	Group * Context * Tense 1	-18.91286	5075.14165	0.9970
12	Group * Context * Tense 2	-2.01180	1.47518	0.1726

5 DISCUSSION

The results of the logistical regression analysis show evidence of differences between the two groups of speakers, as the factors of tense and context have different effects on the choice of case made by either group. This supports the idea presented earlier in this paper that predicate case alternation is a potential area of difficulty for high-proficiency heritage speakers of Russian.

To answer the first of the two research questions raised in §2.4, the findings show that both groups exhibit predicate case alternation in past and future copular sentences, though Instrumental remains the more frequent case. Interestingly, heritage speakers seem to make use of Nominative predicates more frequently than baseline speakers (26.9% for heritage speakers compared to 20.4% for baseline speakers, see Figure 2). However, this does not necessarily mean that they are doing so for the reason of semantic context. Other factors that may contribute to a tendency towards the Nominative or against Instrumental in heritage speakers could be that they are, respectively, among the first and last cases to be acquired (Schwartz & Minkov 2014:60), that the Nominative is more common than the Instrumental as a whole, and that the Nominative is less marked (Pereltsvaig 2007:110). Other studies, such as Fridman et al. (2023), also show that heritage speakers tend to prefer unmarked forms in a variety of tasks, particularly when their dominant language is typologically quite different, such as English (Fridman et al. 2023:700). Thus, when presented with a construction where they know both to be acceptable, they may prefer the Nominative, despite the Instrumental being more common in this particular type of construction. Further research would be needed to support such a hypothesis about the overall use of Nominative by heritage speakers. Aside from overall frequency, these results do demonstrate some of the factors that contribute to the selection of one case over the other; namely, tense and context.

The effect of tense on the frequency of case alternation is seen in the results comparing past and future sentences (Figure 3). Baseline speakers seem to be much more reluctant to use the Nominative in future constructions, and while both groups used the Nominative more in the past than in the future, the difference is significantly greater for baseline speakers. This interaction can be seen in the logistic regression model (Table 2), where Type of Speaker * Tense 2 (past versus future) has a P-value of 0.0158 (estimate: 2.39697, standard error: 0.99346). As discussed in §2.3, there is a lack of literature discussing the relative infrequency of predicate case alternations in specifically future copular constructions, and the rates at which monolingual or Russian-dominant native speakers might accept or wholly reject such constructions. The fact that baseline speakers so rarely select the Nominative option in future conditions with either context (see Figure 1) implies that for many of these speakers, predicate case alternation simply isn't considered an option in future constructions, though further speculation on this topic is beyond the scope of this paper.

For the second question posed in this paper, that being whether heritage speakers use semantic context to determine when case should alternate in the same way that baseline speakers do, we must examine the effect of context. As Table 2 shows, the interaction between Type of Speaker and Context is indeed significant (P-value: 0.0364, estimate: 1.57864, standard error: 0.75428), albeit not as significant as Type of Speaker and Tense. Regardless, the predictive model generated through mixed logistic regression shows that baseline speakers show a stronger likelihood to select Instrumental case when the context is temporary, though tense remains the more significant factor.

To sum up, the major findings of this study are 1) that high-proficiency heritage speakers do use Nominative case in past and future copular sentences, 2) that they do so even more frequently than baseline speakers, and 3) that their selection of case is less dependent on factors such as tense and context than it is for baseline speakers, though there is still correlation present in both groups. This supports the hypothesis presented in this paper that this kind of linguistic knowledge - the semantic and pragmatic reasons

for alternating case - is not as easily accessible to heritage speakers (who may have experienced divergent acquisition and/or attrition) as it is to baseline speakers. This is in line with existing work, such as Montrul's remark that heritage speakers are at a disadvantage compared to baseline speaker with regard to "structures and vocabulary that are more typical of later development and may require high levels of literacy and metalinguistic awareness" (Montrul 2015:256).

5.1 LIMITATIONS

The scope of this study is quite narrow, looking at just one construction that involves case alternation in one heritage language. This study also did not consider the effects of different dominant languages on the heritage language, as all participants had English as the other language in their bilingual dyad. It has been noted in other studies, such as Fridman et al. (2023), that typologically different dominant languages can affect the heritage language in different ways. There may be many instances of alternation and of semantics affecting syntax that heritage speakers may have difficulty with to varying degree, depending on the heritage language, dominant language, and syntactic construction in question.

This study is also limited in size and set-up. The above results are based on a small sample size of only ten heritage speakers and thirty baseline speakers, with some variation in individual performances that may have impacted the results. The format of the study is a potential limiting factor, as it prioritizes accessibility to participants over the depth of data gathered. A written survey with mostly multiple-choice questions takes less time, effort, and commitment on the part of the respondent than an in-person (face-to-face or virtual) interview with the researcher, but it also generates less useful data. In particular, the background questionnaire, used to determine the type of speaker of each participant, would have been much more effective and informative if it were done through conversation where the initial responses could be followed up by clarifying questions. Finally, it must be noted that it is difficult to accurately convey semantic context with only a few written sentences, and the cloze forced-choice task format may not have prompted participants to pay particularly close attention to it. The effectiveness of various combinations of contextual sentences, adjectives, and modifying phrases varied significantly from item to item, resulting in some specific items that seemed to prompt a certain case reasonably well, while others mostly failed to elicit the expected result. Nonetheless, the hope is that the number of stimuli items (six for each combination of tense and context) compensated for this variation to some extent. Even so, the limitations of this study must be taken into account when considering the results.

5.2 FURTHER RESEARCH

There are many avenues for further research into the semantic and pragmatic abilities of heritage speakers, including constructions where multiple cases are grammatically possible, or where forms alternate in other ways. For instance, one could look at verbs like *prostit'* 'to forgive', which can take either a Dative or an Accusative complement depending on the construction. Further research into what kind of knowledge heritage speakers may lack at all levels of proficiency is not only useful in expanding the field of heritage linguistics, but also in directing heritage speakers who wish to improve their language skills for personal or professional reasons, and assist language educators in better being able to cater to this demographic (Nagy & Petrosov 2024:206).

6 CONCLUSION

The results of this study demonstrate that heritage speakers do differ from baseline speakers when it comes to predicate case alternation in copular sentences. While both groups performed similarly well in the present tense, in past and future tenses where

Nominative and Instrumental are both grammatical, the heritage speakers had a higher frequency of Nominative answers, and took factors like tense and context into account to a lesser degree than baseline speakers. Beyond this particular phenomenon in copular sentences, this could point to other areas of potential difficulty for heritage speakers, such as the grammatical encoding of semantics and pragmatics, which can vary greatly between languages and can affect even those with high proficiency in other areas of the language.

ABBREVIATIONS

FUT	future	PRS	present
INS	instrumental	PST	past
NOM	nominative		

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APPENDICES

6.1 APPENDIX A: STIMULI

Each stimulus item is given in transliterated Russian in (a) and translated into English in (b). For items where the predicate case alternates, the second grammatical form of the predicate is given in parentheses. When taking the survey, stimuli appeared with the predicate replaced with a blank in the sentence, and participants were prompted to select one of three case forms for the predicate (Nominative, Accusative/Genitive, and Instrumental).

- (11) a. Borja byl nastojašij učjonyj (nastojašim učonym) ot rožden’ija.
b. Borya was a real scientist from birth.

- (12) a. Vse v Pašenoj semje sočinjali muzyku. On byl potomstvennyj kompozitor (potomstvennym kompozitorom).
b. Everyone in Paša's family composed music. He was a hereditary composer.
- (13) a. Daže v starosti Gena ljubil tancevat' pod ljubuju muzyku. On byl tancor (tancorom) ot boga.
b. Even when he was old, Gena loved to dance to any kind of music. He was a god-given dancer.
- (14) a. Po harakteru, Katja byla staratel'naja studentka (staratel'noj studentkoj).
b. By temperament, Katya was a diligent student.
- (15) a. Hot' ona davno umerla, Ljubiny rasskazy do sih por populjarny. Ljuba byla potrjasajušaja pisatel'nica (potrjasajušej pisatel'nicej).
b. Though she died long ago, Ljuba's stories are still popular. Lyuba was an incredible writer.
- (16) a. Karolina vseгда ljubila vseh razvlekat' svoimi parodijami na znamenitosti. Ona byla actrisa (actrisoj) po prizvaniju.
b. Karolina always liked entertaining people with her celebrity impressions. She was an actor by vocation.
- (17) a. Po skladu uma, Miša nastoyašij poët
b. By temperament, Miša is a real poet.
- (18) a. Kogda mne nado idti v ètu polekliniku, ja vseгда zapisyvajuš' k Igorju. On samyj opytnej vrač'.
b. When I need to go to this clinic, I always sign up to see Igor. He is the most experienced doctor.
- (19) a. Andreju vseгда podhodila akademičeskaja žizn'. Neudevitelno, čto teper' on profesor.
b. Andrej was always suited to academic life. It's no surprise that now he is a professor.
- (20) a. Sudja po ètoj stene s prizami, Nadja vydajušajasja sporcmenka.
b. Judging by this wall of trophies, Nadja is an outstanding athlete.
- (21) a. U Dašy zolotoj golos. Ona talantlivaja pevica.
b. Daša has a golden voice. She is a talented singer.
- (22) a. Inogda Polja rabotaet v deckom sadu, a inogda v načal'noj škole. Po prizvaniju, ona učitel'nica.
b. Sometimes Polja works at a daycare, and sometimes at an elementary school. By vocation, she is a teacher.
- (23) a. Vsem jasno, čto Jaroslav budet virtuozyj muzykant (virtuoznym muzykantom).
b. Everyone can tell that Jaroslav will be a master musician.
- (24) a. Grišiny roditeli rasplanirovali vsju ego karjeru. On budet vysokooplačivaemyj doktor (vysokooplačivaemym doktorom).
b. Griša's parents have planned out his whole career. He will be a high-earning doctor.
- (25) a. Roma obožael čitat' detektivy. On govorit, čto kogda vyrastet, on budet sledovatel' (sledovatelem).
b. Roma loves reading detective novels. He says that when he grows up, he will be a detective.
- (26) a. Ja počti uverena, čto Nastja budet prekrasnaja hudožnica (prekrasnoj hudožnicej).
b. I'm almost certain that Nastja will be a wonderful artist.
- (27) a. Anja userdno repetiruet glavnuju rol' v novom spektakle. Ona budet vedušaja balerina (vedušej balerinoj).
b. Anja trains hard for her main role in the new show. She will be the lead ballerina.

- (28) a. Sveta ljubiti dokopyvaca do pravdy i pisat'. Nesomnenno, ona budet žurnalistka (žurnalistkoj).
b. Sveta likes digging for the truth and writing. Undoubtedly, she will be a journalist.
- (29) a. Čestno govorja, Kostja byl len'ivym dvornikom (len'ivyj dvornik).
b. Honestly, Kostja was a lazy street sweeper.
- (30) a. My s Juroi žyli v odnoi derevne do togo kak on uehal. Jura byl mestnym počtaljonom (mestnyj počtaljon).
b. Jura and I lived in the same village until he moved away. Jura was the local post carrier.
- (31) a. Ilja ljubil pisat' deckije stihi, no malo na ètom zarabatyval. Po sovmestitel'stvu on byl gruzčikom (gruzčik).
b. Ilja liked to write children's poems, but didn't earn much from them. At the same time, he was a mover.
- (32) a. V molodosti Galja byla skromnoj sekretaršej (skromnaja sekretarša).
b. In her youth, Galja was an unassuming secretary.
- (33) a. Maša vladela dvumja jazykami, no ploho pereključalas' s odnogo na drugoj. Ona byla slaboj perevodčicej (slabaja perevodčica).
b. Maša spoke two languages, but couldn't switch between them easily. She was a poor translator.
- (34) a. Kogda Milena učilas' v universitete, ej nado bylo zarabatyvat' na učjobu. V letnije kanikuly, ona byla uboršicej (uboršica).
b. When Milena was attending university, she had to work to afford tuition. Over summer breaks, she was a janitor.
- (35) a. Uže neskolko let Tjoma rabotaet sezonnym voditelem.
b. For a few years now, Tjoma has worked as a seasonal driver.
- (36) a. Nedavno Šura ustroilsja na rabotu v novuju finansovuju firmu. On rabotaet nalogovym inspektorom.
b. Recently Šura got a job at the new finance firm. He works as a tax inspector.
- (37) a. Papa Danji naučil ego razbiraca v mašynah. Teper' Danja rabotaet mehanikom.
b. Danja's dad taught him his way around cars. Now, Danja works as a mechanic.
- (38) a. Tanja rabotaet novoj konduktoršej i lovit bezbiletnikov.
b. Tanja works as the new conductor and catches stowaways.
- (39) a. U Natalji mnogo opyta obšenija s klientami. Natalia rabotaet glavnoj prodavšicej v magazine.
b. Natalia has lots of experience working with customers. Natalia works as the head salesperson at the store.
- (40) a. Ljuda ušla s raboty na zavode. Teper' ona rabotaet oficantkoj.
b. Ljuda left her job at the factory. Now, she works as a waitress.
- (41) a. Poka glavnyj elektrik v otpuske, Daniil budet smennym elektrikom (smennyj elektrik).
b. While the head electrician is on vacation, Daniel will be the replacement electrician.
- (42) a. Nikita predstavitel'nyj čelovek, hot' i ne imeet opyta rukovodstva. Nikita budet neplohim menedžerom (neplohoj menedžer).
b. Nikita is a personable man, despite not having experience in management. Nikita will be a decent manager.
- (43) a. Každyj letom, Vitja izučaet novoe v lagere. V ètom godu, on budet trenerom (trener).
b. Every summer, Vitja learns a new skill at camp. This year, he will be a trainer.

- (44) a. Esli vdrug kto-nibud' v ejo komande vstupit v konflikt, Zlata budet bespristrastnym poserdnikom (bespristrastnyj poserdnik).
 b. If anyone on her team were to come into conflict, Zlata will be an impartial mediator.
- (45) a. Pervyj režisjor ètogo fil'ma ušol s proekta iz-za tvorčeskih raznoglasij. Vera budet novym režisjorom (novyj režisjor).
 b. The original director of this film left the project due to creative differences. Vera will be the new director.
- (46) a. Saninomu djade nužna pomoš' v ego novoj buločnoj. Po vyhodnym, ona budet pekarem (pekar').
 b. Sanya's uncle needs some help in his new bakery. On the weekends, she will be a baker.

6.2 APPENDIX B: ADDITIONAL TABLES

(47) Contingency (cross-tabulation) table for the two participant groups

Type of Speaker		Nominative answers	Instrumental answers	Total
Heritage	Count	97	263	360
	%	26.9	73.1	100.00
Baseline	Count	220	860	1080
	%	20.4	79.6	100.00
Total	Count	317	1123	1440
	%	22.0	78.0	100.00

(48) Contingency table for the two participant groups in the past and present

Tense	Type of Speaker		Nominative answers	Instrumental answers	Total
Past tense	Heritage	Count	23	97	120
		%	19.2	80.8	100.00
	Baseline	Count	35	325	360
		%	9.7	90.3	100.00
	Total	Count	58	422	480
		%	12.1	87.9	100.00
Future tense	Heritage	Count	14	106	120
		%	11.7	88.3	100.00
	Baseline	Count	4	356	360
		%	1.1	98.9	100.00
	Total	Count	18	462	480
		%	3.8	96.3	100.00