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Grammatical precision in early and late Russian English bilinguals: Focusing on past simple and present perfect

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ABSTRACT

This research examines the impact of the age of second language acquisition (AoA) on grammatical accuracy in Russian-English bilinguals, specifically addressing the distinction between Past Simple and Present Perfect tenses. These tenses present unique challenges for Russian speakers, as Russian employs a single past tense form, leading to frequent L1 transfer errors in English. Through a mixed-methods approach including a comprehensive literature review, participant background questionnaires, and grammaticality judgment tests the study identifies gaps in existing research on AoA effects in Russian-English bilingualism and proposes new experimental directions. Administered via the Edvibe platform, the experiment involved 13 participants (6 early bilinguals: AoA <10 years; 7 late bilinguals: AoA >10 years) completing a tailored course, Blogs Unlocked: Past and Perfect Tenses, with pre-, mid-, and post-tests. Results revealed that while early and late bilinguals did not significantly differ in final grammatical accuracy ($p = 0.102$), late bilinguals demonstrated statistically greater improvement between pre- and post-tests ($p < 0.001$ vs. $p = 0.042$ for early bilinguals), suggesting AoA correlates with the rate of grammatical precision enhancement. This underscores the complexity of bilingual language processing, with implications for pedagogical strategies targeting specific grammatical challenges in L2 learners. The study contributes to psycholinguistic, sociolinguistic, and neurolinguistic discourse on bilingualism, advocating for further investigation into factors like language exposure and cognitive abilities. This research will be of particular interest to educators and curriculum designers developing grammar instruction for Russian-speaking learners of English.

Contribution/ Originality: This study contributes to the literature by investigating the effects of age of acquisition (AoA) on grammar acquisition in underrepresented Russian-English bilinguals. It employs a novel digital intervention (Edvibe) for controlled measurement. The primary contribution is the identification of divergent improvement trajectories between early and late bilinguals, challenging assumptions about age-related advantages in second language (L2) refinement.

1. INTRODUCTION

Language learning and teaching have changed greatly during the past few decades. One of the reasons for this is that some basic terms related to language acquisition and teaching have gained renewed meanings. For instance, the term 'bilingualism' has become broader compared to the previous century, when only those who learned two languages from birth were considered bilinguals.

This article focuses on the examination of bilingualism with regard to its theoretical background and studying the dependence of the age of acquisition on grammar accuracy. The analysis presented overviews this correlation using the example of Russian-English bilinguals. The topic chosen for the experiment is "Past Simple versus Present Perfect".

The aims of this study are to analyze scientific literature in order to identify research gaps and possible directions for the experiment; to conduct the experiment, which includes a questionnaire for collecting information about the participants' backgrounds, a grammar test on the topic 'Past Simple vs. Present Perfect,' and to analyze and summarize the data and results received from the participants.

While existing research provides valuable insights, several gaps motivate this study. The information presented in the literature review is likely to offer some limitations in the topic of early and late bilinguals and their language competence. The reasons for this are as follows. Firstly, all the works under scrutiny focus on different ages of acquisition and outcomes that the researchers observe in bilinguals. In addition, some studies focus on the age of acquisition and the level of proficiency as factors for language development. Furthermore, there is a very small number of works aimed at studying Russian-English bilingualism in foreign countries and the way the age of acquisition influences the level of proficiency in English of Russian native speakers.

In this case, it is of great importance to focus attention on this issue in the present study and, more precisely, to find this correlation while scrutinizing the level of proficiency of Russian-English bilinguals, specifically early and late bilinguals. Moreover, it is necessary to focus on a specific topic that can assess the level of proficiency specifically of Russian-English bilinguals. The analysis of grammatical structures of these two languages provides a clear understanding of which topic can be considered an effective way to analyze the language competence of Russian-English bilinguals.

These gaps are especially relevant for the chosen topic ("Past Simple vs. Present Perfect"), where Russian uses a single past tense, whereas English distinguishes between two tenses. This structural difference causes persistent difficulties for L2 learners, yet remains underexplored in AoA studies.

The following aims are assigned in order to fulfill the limitations of previous research and to answer the research questions set in this proposal:

1. To provide the analysis of previous research on the topic of EB (early bilinguals) and LB (late bilinguals).
2. To conduct a questionnaire in order to collect data about the background of the participants.
3. To analyze the results of the grammaticality judgment test (Present Perfect vs. Past Simple).
4. To analyze the dependence between the age of acquisition (AoA) and the level of grammatical accuracy of Russian-English bilinguals.
5. To summarize the results of the study based on the example of early and late Russian–English bilinguals.

1.1. Research Questions

The following research questions are posed based on the literature review conducted:

RQ1: Do those bilinguals who started learning L2 earlier differentiate between Present Perfect and Past Simple better?

RQ2: What is the correlation between the age of acquisition and the level of grammatical accuracy on the topic 'Past Simple vs. Present Perfect' among early and late Russian-English bilinguals?

The aim of this study is to answer these questions and to fulfill the identified research gaps.

2. METHODOLOGY

This paper provides an analysis of the dependence between the age of acquisition and the level of grammar accuracy (on the example of the topic 'Past Simple VS Present Perfect') of early and late Russian–English bilinguals and the results of this analysis. The data were collected with the help of the questionnaire and grammar tests provided in the course 'Blogs Unlocked: Past and Perfect Tenses.' Moreover, such methods as analysis and synthesis are used to provide an in-depth description of the phenomenon.

2.1. Participants

The participants are native speakers of the Russian language; their foreign language is English (not obligatory L2). All participants are students of MISIS (National University of Science and Technology "MISIS," Moscow, Russian Federation) 1st- and 2nd-year undergraduates and 1st-year master's students majoring in Linguistics. It was agreed to divide the participants as follows: early bilinguals are mostly people under 18 who started learning English before the age of 10. Late bilinguals, in turn, are mostly people over 18 who started learning English after the age of 10.

The pool of participants consisted of 13 Russian–English bilinguals. The experiment was based on the course 'Blogs Unlocked: Past and Perfect Tenses,' which was divided into two parts: for early and late bilinguals. The number of early and late bilinguals who took part in the experiment was 6 and 7, respectively. They are aged between 11 and 30 years old; early bilinguals ranged from 11 to 17, and late bilinguals from 21 to 30.

From the outset, all participants were fully informed about the nature and objectives of the experiment to guarantee their voluntary involvement and complete dedication. All resources utilized by the participants during the research process were provided.

2.2. Instruments

To conduct needs analysis, a questionnaire was chosen as the main instrument. It was distributed among 22 Russian–English bilinguals. Based on the results of the questionnaire, the course 'Blogs Unlocked: Past and Perfect Tenses' was designed and developed on the educational platform Edvibe, which served as the main platform for course administration. It is crucial to note that the course was divided into two parts, for early and late bilinguals.

The course included a pre-test, a mid-test (modular test), and a post-test. The pre-test was introduced to the participants at the beginning of the course and served as a starting point for further analysis of the learners' grammar accuracy. The post-test was introduced at the end of the course to compare the effectiveness of the course and to answer the research questions raised in this article. In terms of time distribution, one academic hour was dedicated to both pre- and post-tests. They were divided into two parts: a test with 10 questions and a fill-in-the-gaps section with 5 sentences to assess whether the learners know Past Simple and Present Perfect.

It was decided to consider one of the course modules ('Past Simple vs Present Perfect') as the mid-test. It served as the final lesson in the grammatical part of the course presented to the participants. The assignments included in this test were the following: testing (10 questions), fill in the blank (10 gaps), and reading comprehension (a text with 5 questions). In terms of time distribution, 1 academic hour was dedicated to this assignment.

2.3. Procedures

The data collection procedure for needs analysis consisted of the questionnaire, which was distributed among Russian-English bilinguals. The actual questionnaire can be found in Appendix A. To protect the participants' privacy and ensure confidentiality, the survey was disseminated electronically. A two-week timeframe was given for the collection of responses. After this period, the gathered data was then compiled and examined to be implemented in course design later.

The data received from the questionnaire was analyzed using descriptive statistical methods and served as the basis for pedagogical task design and development. The analysis revealed that potential participants might have a B1-B1+ level of English. Moreover, further analysis of the data showed that learners experience challenges with grammar and are interested in social network publications in English. This resulted in further analysis of grammatical issues Russian–English bilinguals have. The topics suggested for the course 'Blogs unlocked: Past and Perfect Tenses' are presented in Table 1.

Table 1. Suggested topics for the course 'Blogs unlocked: Past and perfect tenses'.

Number	Topic
1	Past simple
2	Present perfect
3	Past simple vs present perfect
4	Writing blogs

Following this, the tasks were organized into a course on the Edvibe platform, and students were provided access via a self-enrollment link emailed to them. Prior to the experiment, students were requested to complete a pre-test to supply data for subsequent comparison with the results of the post-test at the end of the course. The actual pre- and post-tests can be found in Appendixs B and C.

The experiment lasted 6 weeks in an asynchronous format. The participants had access to the course on the Edvibe platform, with lessons opened sequentially. Since the course had two parts, each group of bilinguals (early and late) had access to the sections appropriate for them. The materials presented in each part were similar in terms of topics, level, and difficulty, but they differed in some modules and lessons to suit the participants' ages.

3. LITERATURE REVIEW

3.1. Bilingualism: Theoretical Overview

Bilingualism is of great importance at present. It is studied within the framework of psycholinguistics, sociolinguistics, and neuro-linguistics. There are several definitions of bilingualism nowadays. Some researchers claim that it is the knowledge of two languages (Stefanakis, 2000). Others consider it to be more complex; for instance, Hakuta (2009) claimed that it is a coexistence of two linguistic systems in an individual's brain. These definitional differences likely stem from distinct disciplinary perspectives: while linguists often emphasize functional competence, neuroscientists prioritize cognitive architecture.

The definition of bilingualism always includes the fact of knowing two languages. However, the comparison of foreign and Russian opinions on the issue of bilingualism differs in terms of the effectiveness of language use. To be more specific, UNESCO (2003) claims that it is a possibility of using two languages effectively, while according to the dictionary of linguistic terms published in Russia, it is mentioned that it may be a potential or real ability to use two languages (Zherebilo, 2010). This divergence highlights how cultural and institutional contexts shape theoretical frameworks, potentially leading to fragmented research paradigms.

Many researchers scrutinize this topic in different ways. For instance, how bilingualism influences language learning, to what extent L2 may be acquired by various types of bilinguals, and if there is any connection between the type of bilingualism and the level of proficiency in both languages a person speaks.

3.2. Early and Late Bilinguals

Recently many researchers focus on Bilingualism and its features. It was stated by De Bruin (2019) That bilinguals are better at changeable tasks. However, it is possible to claim that there are no two bilinguals with the same characteristics all over the world (De Bruin, 2019). These characteristics are influenced by the age of acquisition (AoA) of early and late bilinguals, language proficiency, use, and ability to switch quickly in practice. The inherent

variability highlighted by de Bruin complicates generalizations and underscores the need for carefully controlled comparative studies.

In the present study, the focus is on the correlation between the age of acquisition and the level of proficiency reached by early and late bilinguals. The use of a second language implies different processes in the brains of early and late bilinguals (Liu et al., 2021). The age at which people can be considered to belong to early or late bilinguals varies. Some studies consider 0-5- and 5-10-years old participants as early and late bilinguals, while other research considers 0-10 and 10+ years old as early and late bilinguals. These inconsistent thresholds across studies represent a significant methodological challenge, making direct comparisons difficult and potentially explaining some contradictory findings in the literature.

Nevertheless, according to Jaekel, Schurig, van Ackern, and Ritter (2022), early starters (early bilinguals) are children under the age of 6-7, and late starters (late bilinguals) are children who began acquiring L2 (second language) at the age of 8-9. Other researchers classified bilingual individuals as early or late based on their L2 proficiency or the age at which they started actively using both languages consistently (Köpke et al., 2021). The reliance on fundamentally different classification criteria – chronological age versus functional proficiency or usage patterns – creates a fundamental ambiguity in the field and risks comparing heterogeneous groups.

Summing up, it is possible to claim that there are various differences between early and late bilinguals not only in the age of acquisition but also in the external factors that influence their performance. Many studies have been conducted to provide a deeper analysis and understanding of the topic of bilingualism and the age of acquisition.

3.3. Factors Influencing the Bilinguals' Outcomes

The age of acquisition is the primary factor that might influence outcomes. Nevertheless, it is stated that only early bilinguals outperform monolinguals (Kaushanskaya & Marian, 2007). Furthermore, the second vital factor is the level of proficiency that may be reached by early and late bilinguals. Opinions among researchers differ; some consider that the proficiency level varies between early and late bilinguals due to factors such as the environment in which bilinguals live, the frequency of using their native and foreign languages, and, most importantly, the method of learning their L2 (either through natural immersion in a foreign country or through instruction at school or university). Others believe that the difference may not be significant, as bilingualism from their perspective involves the free use of two languages. This conflict between researchers emphasizing differential attainment versus those focusing on functional equivalence may stem from differing research questions (ultimate attainment versus processing efficiency) or the specific linguistic domains examined.

In research by Jaekel et al. (2022), it was stated that several characteristics influenced the level of proficiency. Twelve schools and 2,827 participants aged between 6 and 15 were involved in this experiment. The students were divided into Early Starters (ES), who began learning EFL (English as a Foreign Language) at age 6-7, and Late Starters (LS), at age 8-9, which meant they had different amounts of learning time during the experiment. They were assessed during their education at school in years 5, 7, and 9. Students had 105 lessons, mostly of 45 minutes, totaling 78¾ hours.

The researchers also collected some personal characteristics, for instance, sex, L1 (first language), cultural capital (i.e., number of books the students have at home), SES (socioeconomic status), the last grade in English in Year 8, and cognitive abilities (a general mental capability involving reasoning, problem solving, planning, abstract thinking, complex idea comprehension, and learning from experience). All tests that were provided to the students had been used in previous studies, and the data was collected during school lessons.

The results showed that ES and LS students differed significantly with regard to cognitive abilities and income. In Year 5, ES outperformed LS in both listening and reading. In Year 7, LS caught up with ES in listening and outperformed them in reading skills. In Year 9, ES outperformed LS in both listening and reading again. Most importantly, the factors that most influenced the level of proficiency were L1, cognitive abilities, and grades in English

in Year 8. The fluctuating performance advantages (ES-LS-ES) across the years suggest a complex, non-linear interaction between AoA, amount of instruction, developmental stage, and learner characteristics like cognitive abilities and prior achievement (grades), challenging simplistic notions of a uniform AoA effect. Furthermore, the significant differences in SES and cognitive abilities between the ES and LS groups at baseline highlight a critical confounding variable often inadequately controlled in AoA research.

Moreover, in the work of De Bruin (2019) it was also presupposed that the later a person starts acquiring the language, the more effort they need in terms of language control in output, whereas early bilinguals are better in changeable tasks. Furthermore, late bilinguals are characterized by the use of great effort, since by the time they learn a foreign language, their neural connections are already stable enough, and more effort needs to be made to build new neural connections necessary when learning something new, especially a foreign language with its own system (Klimova, Sharabarina, Tikhova, & Dubinka, 2018; Liu et al., 2021). Due to this, early and late bilinguals may allocate their cognitive resources differently when learning and using the second language, particularly when it comes to grammatical, syntactic, and phonological procedures (Liu et al., 2021). This 'cognitive resource allocation' hypothesis offers a plausible explanation for potential differences in processing strategies, particularly under demanding conditions like grammatical accuracy tasks, but requires more direct empirical validation linking neural effort measures to specific linguistic performance outcomes.

In the research of Shishkin and Ecke (2018) it was claimed that bilinguals may face such difficulty as inability to find an appropriate lexical or grammatical unit in the semantic structures of languages they know. It is also stated that those bilinguals who studied in the natural environment showed better results than those who learned the second language at school or any other institution. That is a clear example of how the language systems and, especially, their differences influence the outcomes. This finding underscores the critical role of learning context (naturalistic vs. instructed) as a potential moderating variable often entangled with, yet distinct from, AoA itself.

Nevertheless, the way neural connections are built is an arguable question. Some researchers believe that L2 builds new neural connections; others consider that L1 and L2 have the same structures when a speaker reaches a high proficiency level in L2 (Köpke et al., 2021). This apparent contradiction in neural models may reflect differences in the proficiency levels of the participants studied, the specific linguistic tasks used during neuroimaging, or the sensitivity of the neuroimaging techniques employed, rather than a fundamental incompatibility. However, it was stated by Pavlenko and Malt (2011) that language transfer may play a crucial role in the level of proficiency of bilinguals. It may lead to both positive and negative outcomes. The direction and magnitude of transfer likely interact significantly with AoA and the structural similarity/dissimilarity between L1 and L2, such as the absence of a Present Perfect/Past Simple distinction in Russian for English learners.

It was also stated by Liu et al. (2021) that the hemispheres of both languages are involved in bilinguals who learned L1 and L2 before the age of six, whereas those who learned L2 after the age of six exhibit left hemisphere dominance in both languages. Therefore, it is more appropriate to consider individuals who acquired L2 before the age of 6 as early bilinguals. This neurological criterion offers a biologically grounded definition; however, its practical application in behavioral studies outside neuroimaging contexts remains challenging.

It is important to mention that some researchers also believe that there is also a difference on how the bilinguals acquired the language (what context they had). It may be figured out through instructions or a natural environment (De Bruin, 2019). Nevertheless, since this study focuses on Russian-English bilinguals, the environment also plays an important role, as well as the age of acquisition of L2 and the level of proficiency. It was stated that the natural environment had a better effect on the learners' output (De Bruin, 2019). The relative contribution of AoA versus learning context (naturalistic vs. instructed) to ultimate attainment, especially for grammatical competence, remains a key unresolved question with significant implications for language education policy.

Taking into consideration everything mentioned above, it is possible to state that early and late bilinguals differ in some cases; it may be the level of proficiency or the ability to resist changes in environment, especially in language

one, but it mostly depends on the factors that form the basis of the analysis. Most importantly, the output must be analyzed to gain a clear understanding of the differences between early and late bilinguals and to what extent their initial data influence their outcomes. Language production or understanding, vocabulary, grammar, and overall fluency are only a few of the numerous elements that constitute language proficiency. According to Jaekel et al. (2022) some individual learners' characteristics may explain the differences in outcomes. For example, factors such as L1, cognitive abilities, and grades in English at school can be influential. The strong influence of individual differences (e.g., cognitive abilities, prior achievement) and contextual factors (e.g., SES, learning environment) demonstrated by Jaekel et al. (2022) suggests that AoA might often be less determinative than these co-varying factors in many real-world settings.

Grammar and vocabulary may be analyzed together as language use. It is considered to be of the same importance as the age of acquisition. They are usually scrutinized on the basis of self-reports done by the participants (De Bruin, 2019). However, reliance on self-reports introduces potential biases (e.g., self-assessment accuracy, social desirability) that may obscure true relationships between variables like AoA, usage patterns, and grammatical accuracy. A more accurate analysis can be reached by asking about impact and use in various situations, including various interlocutors (such as family, friends), venues (such as school, media), and themes, as opposed to asking respondents to describe the overall impact/use assessment (e.g., emotions, leisure). This is also connected with the ability to be flexible in the changeable environment, which was mentioned above (Zhukova, Klimova, Cameron, Kozlovtseva, & Chernyishkova, 2023). In addition to offering thorough details regarding the age of acquisition and skill level, researchers also discuss the overall sociolinguistic background, the manner in which bilinguals have mastered their respective languages, and the other languages they are capable of speaking (De Bruin, 2019). Although bilinguals' usage of their native tongues and their ability to transition between them are sometimes disregarded, it still plays a significant role in language use in daily life (De Bruin, 2019; Tretyakova, Arutyunian, Ginzburg, Azarova, & Belozerova, 2023). The frequency of L1 and L2 usage was scrutinized by De Bruin (2019). It was stated that it influenced the vocabulary size and grammar accuracy of bilinguals. Another type of multilingual experience that has recently been linked to performance issues with various executive control tasks is language switching. Crucially, some researchers did not find any differences between early and late bilinguals, particularly in studies that carefully matched participants on proficiency and usage patterns or focused on specific cognitive domains. These null findings serve as a critical reminder that AoA effects are not universal and may be modulated by other variables or specific to certain aspects of language or cognition.

4. RESULTS AND DISCUSSION

The results of pre- and post-tests were calculated separately for early and late bilinguals in accordance with the research questions. Firstly, the results of the post-test for both early and late bilinguals were analyzed to answer RQ1. Secondly, the significance of the results for both groups was compared to provide an answer for RQ2. Both tests included 15 questions, each worth one point for the correct answer.

Considering that the number of participants was under 50, a Shapiro-Wilk test was used to determine the normality of the pre- and post-test outcomes for both early and late bilinguals. The results of this test indicated that both dependent variables are normally distributed in the pre- and post-test results ($p1 = 0.442$, $p2 = 0.183$, $p3 = 0.091$, $p4 = 0.144$). Therefore, a parametric paired samples t-test was applied for the analysis of the results.

In order to identify whether early Russian-English bilinguals outperform late ones in differentiating Past Simple and Present Perfect, a paired sample t-test was used. It showed that the difference between the results of the post-test of early and late bilinguals is not significant ($t(5) = -2.000$, $p = 0.102$). It means that early bilinguals differentiate target grammar at about the same level as late bilinguals do, and there is no noteworthy contrast between the results. The results are presented in bar charts in Figure 1.

For better understanding, it is possible to note that the mean scores of post-tests for early and late bilinguals are quite close (M1 = 13.333, M2 = 14.000), taking into account that the maximum number of points is 15. These results are presented in Table 2.

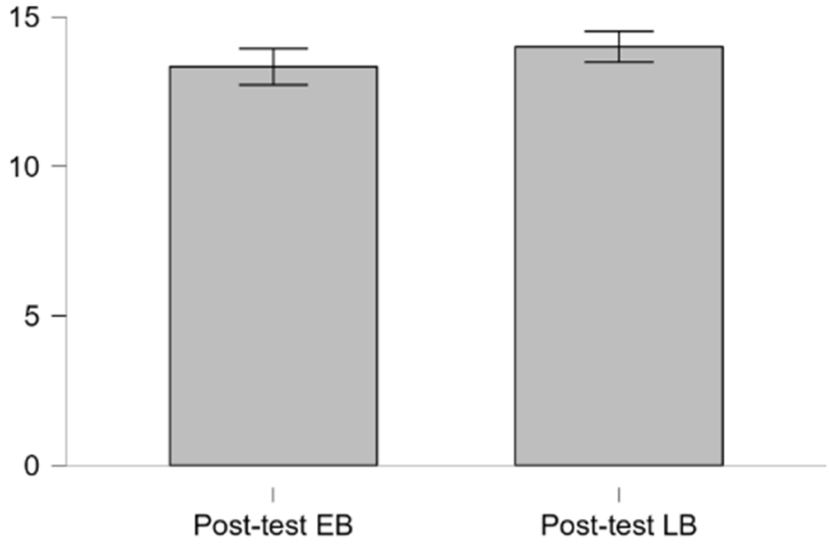

Figure 1. Early and late bilinguals' performance on post-tests 'Past simple VS present perfect'.
Note: Post-test EB = Results of post-test for early bilinguals; Post-test LB = Results of post-test for late bilinguals.

Table 2. Mean score.

	Number of participants	Mean
Post-test EB	6	13.333
Post-test LB	7	14.000

In order to determine the correlation between the age of acquisition and the level of grammar accuracy among early and late Russian-English bilinguals (RQ2), a paired sample t-test was conducted twice, and the p-values were compared and analyzed.

The results of a paired sample t-test for the early bilinguals showed that the improvement in the results among participants who started learning English before the age of 10 is statistically significant ($t(5) = -2.712$, $p = 0.042$). They are presented in Figure 2 in bar charts.

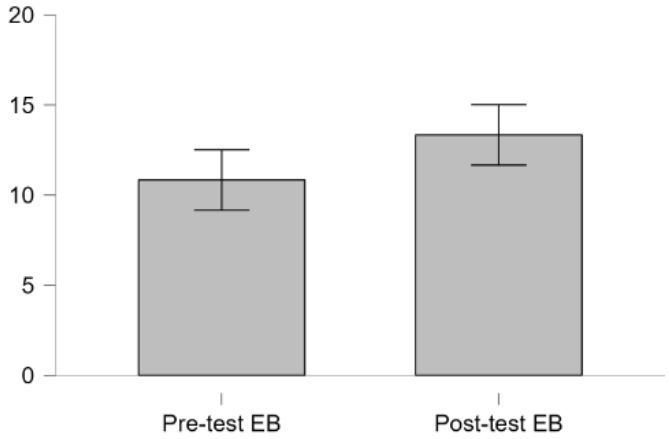

Figure 2. The results of early bilinguals.
Note: Pre-test EB = early bilinguals' results of pre-test; Post-test EB = early bilinguals' results of post-test.

At the same time, the growth in the results of late bilinguals can also be considered statistically significant ($t(6) = -6.358$, $p < 0.001$) see Figure 3.

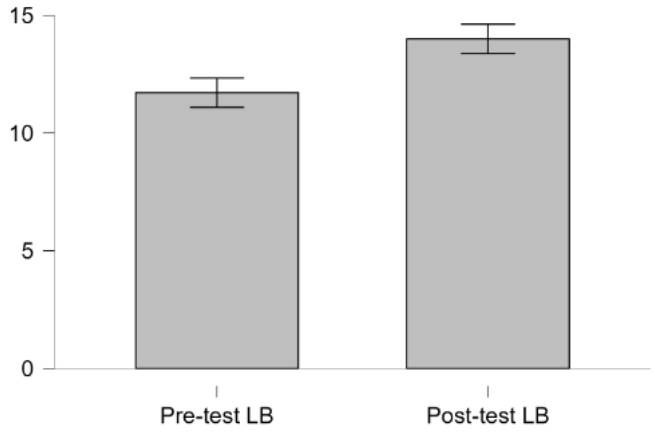

Figure 3. The results of late bilinguals.

Note: Pre-test LB = Late bilinguals' results of pre-test; Post-test LB = Late bilinguals' results of post-test.

In order to identify the dependence between the age of acquisition and the level of grammar accuracy on the example of the topic 'Past Simple VS Present Perfect' of early and late Russian-English bilinguals, abovementioned p-values of the results of both groups were compared. The comparison presented in Table 3 showed that late bilinguals demonstrated a more significant improvement in test scores (when comparing pre-tests and post-tests) than early bilinguals. From the above, it can be concluded that late bilinguals are likely to achieve higher grammar accuracy than early ones.

Table 3. P-values.

	Number of participants	P-value
Early bilinguals	6	$p = 0.042$
Late bilinguals	7	$p < 0.001$

The results of this study show that early and late bilinguals do not outperform each other in grammar accuracy (at least on the example of the topic 'Past Simple VS Present Perfect'). However, it was found that the age of acquisition plays an important role in L2 learning. Findings suggest that there is a correlation between the AoA and the level of grammar accuracy of bilinguals.

The findings of this research correlate with the existing literature that suggests that the age of acquisition (AoA) of a second language (L2), in this case English, significantly impacts the proficiency level, and, to be more specific, grammar accuracy, of bilingual individuals. This study reinforces the argument suggesting that bilingualism is a complex phenomenon that goes beyond mere knowledge of two languages.

While this study offers valuable insight into the relationship between the age of acquisition and language proficiency among bilinguals, it has some limitations that should be taken into consideration when conducting further research.

Firstly, the nature of the sample, focusing primarily on Russian-English bilinguals, may limit the generalizability of the findings to other bilingual groups. Moreover, this study focused on specific aspects of English grammar, which may not fully capture the complexity of language proficiency.

Further research is needed to explore the impact of other factors, such as the role of exposure to the second language, the influence of cognitive abilities, and others. In order to do this, there will be a need to form two groups

of early and late bilinguals, identify the direction of the study, especially the factors influencing their performance, and conduct needs analysis to identify the materials that may be taught to the participants of the experiment.

Moreover, it is crucial to have a larger pool of participants completing the whole course to validate the findings. By having a more extensive group of participants, we can ensure a more representative sample, which can lead to more accurate and reliable results. This approach may help to obtain clearer results, as it may reveal a more specific difference between early and late bilinguals. Furthermore, a larger sample size may allow us to observe a broader range of experiences and perspectives, thereby enriching our understanding of the issue.

5. CONCLUSIONS

This study provides valuable insights into the relationship between the age of language acquisition and the grammatical accuracy of bilingual individuals. Despite the absence of a significant difference between early and late bilinguals in terms of their grasp of the 'Past Simple vs. Present Perfect' grammatical concept, the results do point towards a crucial correlation between the age of language acquisition and overall grammatical precision.

This correlation suggests that when a second language is learned, it could play a role in influencing the accuracy of its grammar use. However, the study is not without its limitations. The focus on Russian-English bilinguals and specific aspects of English grammar could limit the scope of the findings, as it is uncertain whether the same trends would be observed in bilinguals of different language pairs or with different grammatical phenomena.

Furthermore, the specificity of the study's focus may preclude a broader understanding of bilingualism and its effects on language proficiency. Therefore, it is crucial that future research in this area considers a larger participant pool and includes additional parameters, such as the extent of second language exposure and the cognitive abilities of the participants.

By doing so, the findings could be more representative of the wider bilingual pool and provide more reliable results, paving the way for a more comprehensive understanding of the influence of bilingualism on language acquisition and use.

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Institutional Review Board Statement: The study involved minimal risk and adhered to ethical guidelines for social science fieldwork. Formal approval from an Institutional Review Board was not required under the policies of MISIS National University of Science and Technology, Russia. Informed verbal consent was obtained from all participants, and all data were anonymized to ensure participant confidentiality.
Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

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Appendix A.

Needs analysis questionnaire

Course for Russian-English Bilinguals

This course is aimed at early and late Russian-English bilinguals. The questionnaire takes approximately 15 minutes to complete. If you disagree to share personal information, please, contact us using email: kosareva.el.al@gmail.com

Section 1. Personal information

1. How old are you?

- <20
- 20-30
- 30-40
- 40-50
- 50+

2. Where are you from?
3. What do you do? (School learner, university learner, work (if yes, specify the profession))
4. At what age have you started learning English?

- Before the age of 10
- After 10 years old

5. How much time are you ready to spend on taking the course?

- 1-2 hrs a week
- 3-5 hrs a week
- 5+ hrs a week

6. What is your aim of studying English?
7. What are your reasons for studying English? Choose all suitable answers.

- I need it for my job

- I want to get education in English
- I need it for daily life (watching movies, communicating with people)
- I want to travel abroad
- I need to pass exam
- Other

8. In what situations do you need English in your daily life? Choose all suitable answers.

- Buying something on the internet.
- Watching movies
- Teaching or learning something at school, university, college
- Communicating with friends
- Listening to music
- Doing national examination
- Doing job interview
- Emailing / Social network communication
- Watching TV
- Searching for something on the internet.
- Talking to family members
- Reading or writing publications in social networks

9. What do you enjoy the most in the learning process?

- The process of learning
- The result (for example, a certificate)
- Achievement of your goal ("I know how to talk about my habits")

10. In what way do you prefer taking notes? Choose all suitable answers.

- By hand
- In an app using graphs and schemes
- Using word processing applications (for example, Microsoft Word)
- Using digital notes
- Recording voice first then re-listen to it.

11. How do you usually try to remember new information? Choose all suitable answers.

- Doing tests
- Practicing
- Listening to lectures

12. Do you have any special needs we have to know about?

- Yes
- No

Section 2. For learners with special needs.

Tell us about your special needs so that the course can be designed in a way suitable for all learners.

1. Select the issues influencing your work

- Eyesight
- Concentration
- Challenges while speaking
- Emotions
- Traumatic injuries
- Other

2. Give us all the necessary comments if you have any

Section 3. Checking the level.

Answers to these questions will help us create better materials suitable for every participant.

1. Can you use easy grammatical structures correctly?

- Yes
- Difficult to state
- No

2. Do you sometimes mix up grammatical tenses?

- Yes
- No

3. Do other people understand you when you talk to them?

- Yes
- Mostly
- Sometimes
- No

Thank you for your participation!

Appendix B.

Pre-test

Task 1. Choose the correct answer

1. I _____ London last year.

a) visited b) have visited c) has visited

2. She _____ at that company for five years.

a) worked b) have worked c) has worked

3. We _____ to the beach yesterday.

a) went b) have gone c) has gone

4. They haven't _____ finished their homework.

a) already b) just c) yet

5. They _____ to Japan twice.

a) travelled b) have travelled c) has travelled

6. She _____ her work yet.

a) did not finish b) have not finished c) has not finished

7. I _____ him yesterday.

a) didn't see b) haven't seen c) hasn't seen

8. They _____ English for six months.

a) studied b) have studied c) has studied

9. They _____ that movie many times.

a) saw b) have seen c) has seen

10. My parents _____ a new house last year.

a) bought b) have bought c) has bought

Task 2. Fill in the gaps

11. I _____ (not finish) my homework yet.

12. They _____ (travel) to Europe several times.

13. He _____ (not go) to the party last night.

14. I _____ (visit) that museum many times.

15. She _____ (visit) many places two years ago.

Appendix C.

Post-test

Task 1. Choose the correct answer

1. My parents _____ a new car last week.

a) bought b) have bought c) has bought

2. He _____ (live) in Paris for two years.

a) lived b) have lived c) has lived

3. She _____ that movie last night.

a) saw b) have seen c) has seen

4. I have _____ finished my homework, no extra tasks.

a) already b) just c) yet

5. We _____ that movie before.

a) did not see b) have not seen c) has not seen

6. He _____ to the beach this summer.

a) went b) have gone c) has gone

7. We _____ to the party yesterday.

a) didn't go b) haven't gone c) hasn't gone

8. They _____ their project yet.

a) didn't finish b) haven't finished c) hasn't finished

9. She _____ at that company since 2010.

a) worked b) have worked c) has worked

10. She _____ French when she was younger.

a) studied b) have studied c) has studied

Task 2. Fill in the gaps

11. We _____ (already / book) our tickets.

12. He _____ (live) in this city all his life.

13. They _____ (see) that movie last week.

14. My brother _____ (Paint) this beautiful picture.

15. He _____ (leave) for work at 8 am the day before yesterday.