

## A Quantitative Assessment of L1 Attrition and Phonological Maintenance in Long Term Immigrant Communities

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**Abstract:** Attrition to the first language (L1) attrition is a significant effect when dealing with immigrants, in which the long-term implications of a dominant second language (L2) may lead to certain types of linguistic change, particularly phonological. Despite the fact that research on language attrition has been on the rise in the recent past, very few studies have been carried out to give quantitative information on the dynamics of preserving and changing phonological characteristics. The study aims to establish the degree of L1 loss and phonological retention of the long-term immigrant speakers in a quantitative way. Phonological tests, speech acoustic analysis (vowel space and pitch), and language use and exposure structured questionnaires were used to collect data. The findings show that the phonological attrition is medium and manifested in the accuracy decline and further shift of norms with the increase in the length of residence. There was also a difference in generational aspect whereby the late migrants had greater phonological retention compared to the early migrants. L2 dominance was established to be a significant contributor in the phonological change. The paper highlights important implications of bilingual phonological systems and reasons why measures must be implemented to ensure that the immigrants maintain their languages.

**Key Words:** L1 attrition, phonological maintenance, immigrant communities, bilingualism, language shift.

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### Introduction

The first language (L1) attrition may be termed as a progressive decline in the competency of a speaker in “his or her” native language, which can generally occur because of a decline in the amount of exposure to and use of this language with time (Schmitt & Sorokina, 2024). The latter may be witnessed particularly in the bilingual and immigrant environment where the system of the second language (L2) may prevail or replace the L1 system (Adebayo, 2025). In this greater context, phonological maintenance refers to the degree to which individuals preserve native-like pronunciation properties, such as phonemes, stress patterns, and prosodic patterns, even after long-term exposure to a different language (Luzietti & Meluzzi, 2023). The L1 attrition along with the phonological preservation are combined to acquire a crucial insight into the process of development that language systems undergo under the circumstances of language interactions and reduced input.

One of the most significant settings that can be considered to study the processes is the long-term communities of immigrants. When people have migrated and settled in a linguistically diverse setting, tend to have their language dominance changed, and their L1 is likely to change as time progresses

Vulchanova et al., (2023) These alterations may occur at not only the lexical and grammatical levels but also the phonological level, where minor alterations in the pronunciation can be an indication of more underlying cognitive and linguistic reorganization (Smeets, 2024). Interestingly, sometimes phonological

change may be one of the earliest and most obvious manifestations of language attrition, particularly in those instances when the L2 has a considerable influence on sociocultural and communicative aspects Shaktawat, (2024).

The phonological attrition is an important study due to a number of reasons. First, it contributes to the theoretical perspectives of bilingualism and language processing in the sense that it introduces to the fore the interaction of competing linguistic systems that is dynamic (Lehtinen et al., 2024a). Second, it implies something on the practical aspects of language maintenance, language education, and identity maintenance of the immigrant populations (Akram et al., 2025). Third, phonological characteristics are socially salient identities of oneself, and therefore their preservation or loss makes an important subject of sociolinguistic studies (Luzietti & Meluzzi, 2023). Despite these implications, the existing literature has paid enormous concern to the aspects of lexical and grammatical attrition, but phonological aspects have not been addressed in a quantitative manner compared to the previous two aspects (Chaouch-Orozco & Martín-Villena, 2025).

One major research gap is that there are no quantitative studies conducted that have empirically based research to quantify phonological attrition using standard measures. Even though the phonological studies have not been developed methodologically in such a way in recent works, although they have applied such a creative model as a network analysis to find out the first signals of lexical attrition (Chaouch-Orozco & Martín-Villena, 2025), there is practically nothing of that type. Others, as well as the age of migration, time of residence, and frequency of L1 usage, have proven to be influential, but the quantitative relationship between phonological maintenance and the latter is yet to be well understood (Lehtinen et al., 2024a; Li et al., 2025).

To bridge these gaps, the present research aims at providing a quantitative assessment of L1 attrition and phonological maintenance in long-term immigrant populations. In particular, it aims to determine the extent of phonological change and the variables in the sociolinguistic and experiential factors that affect retention.

The study's research questions are:

- To what extent does L1 phonology decline among long-term immigrants?
- How does length of residence in an L2-dominant environment affect phonological retention?
- Does age of migration significantly influence the degree of phonological attrition?

In line with this, the study hypothesizes that the greater the exposure to L2 environments and the less the L1 use, the more the phonological attrition will be; and the earlier the migration, the lower the levels of L1 phonological maintenance will be.

There are six sections in the paper. Section 1 contains the definition of the idea of L1 attrition and phonological maintenance, research gap, and objectives. Section 2 reviews past literature on L1 loss, phonological shift and language shift among immigrants. The quantitative research design, participants, data collection tools, variables and statistical analysis are reported in the section 3. Section 4 displays the results in the form of tables and figures, which reveal trends of phonological attrition and their correlations with such important variables. Section 5 provides the interpretation of the results as referring to the cognitive, social and linguistic factors. Lastly, Section 6 summarizes the findings and implications and provides future research directions.

## Literature Review

L1 attrition is a phenomenon that has also garnered much research as a multidimensional phenomenon where a lack of language use results in lexical, grammatical, and phonological changes (Schmitt & Sorokina, 2024). The earliest theoretical models theorized the process of attrition as a language loss process, although more recent models emphasize the dynamism and reversibility of the process of attrition due to ongoing contact between the language systems (Adebayo, 2025). Attrition has been empirically shown to depend on a variety of factors, among which are language dominance, frequency of usage, and sociocultural context (Mlibwa et al., 2025).

The L2 influence has always been an influential factor in the promotion of L1 attrition in studies. This can be illustrated by the study of the bilingual groups in which the more proficient L2 is, the more the interference can be manifested, in particular, in lexical retrieval and organization of structure (Akram et al., 2025). On the same note, research in grammatical attrition reveals that it is possible to remodel L1 grammatical systems through exposure to competing L2 discourse properties over time (Smeets, 2024). These findings support the notion that attrition is not just one of the passive losses but a restructuring process that is brought about by cross-linguistic interaction.

Quantitative methods have started to give more in-depth insights into the pattern of attrition. The verbal fluency tasks have been used indicatively to determine the ease of accessing the lexicon and processing efficiency and prove that the frequency of use of the native language could be utilized to counter the effects of attrition (Lehtinen et al., 2024a; Lehtinen et al., 2024b). In addition, there are other new methods such as the Lexical Attrition Foundation (LeAF) model that leverages network science to find the first signs of lexical loss, and sophisticated analytical tools can be employed in the study of attrition (Chaouch-Orozco & Martín-Villena, 2025). In spite of these developments, the majority of quantitative research is still based on the lexical and semantic fields with less attention to phonological ones.

The maintenance of a native pattern of pronunciation in less exposure and increased influence of an L2 is a term referred to as "phonological maintenance." Unlike the lexical or grammatical features, phonology is highly sensitive to contact with other languages as well, and it is apt to change in a delicate but systematic way (Luzietti & Meluzzi, 2023). Such changes can be changes in the quality of the vowels and consonant production and characteristics of the prosodic changes, like the intonation and rhythm.

The sociophonetic study has been in a position to provide a very clear picture of phonological variation as it concerns bilinguals. To this end, research on immigrant populations has ascertained that the L2-influenced phonetic behaviors are exhibited even by the very competent speakers in their L1 speech (Luzietti & Meluzzi, 2023). Similarly, studies on the phonetic backward transfer indicate the phonological system of L2 is able to influence the speech patterns of L1 to the point that give rise to hybrid speech patterns (Shaktawat, 2024). These results highlight the two-way aspect of the phonological influence of bilingual personalities.

A frequency of L1 use has been pointed out to be a significant determinant in the maintenance of phonological processes. Experimental research suggests that the prevalent use of the native language can not only help to retrieve lexical information but also phonemic stability and fluency (Lehtinen et al., 2024). On the other hand, L1 environments can lead to phonological drift when there is limited exposure to L1 environments, especially among those who are mostly using an L2 in their day-to-day communication (Li et al., 2025). Despite these observations, quantitative measures of phonological retention have not been standardized, and this diminishes the capacity to compare the results of studies.

The natural setting of language shift and attrition is within the immigrant communities, where individuals may be subjected to varying degrees of L1 and L2, and hence, it is a natural environment to observe the processes. The initial generation of immigrants is more likely to have a higher L1 proficiency as compared to the subsequent generations, who have a higher L2 dominance and less use of the native language (Vulchanova et al., 2023). Education, social integration, and language attitudes determine this change in the generations.

Sociolinguistic study accentuates the effect of identity and community networks on determining language maintenance. Strongly culturally affiliated speakers and those speakers who actively use their L1, have a higher probability of preserving the linguistic traits such as phonology (Mlibwa et al., 2025). On the other hand, those who study the language of the majority in the host society may end up losing their culture more so in the informal and spoken languages (Akram et al., 2025). Such inclinations indicate that language is not necessarily an issue of cognition but is based on social and cultural surroundings.

The fact that there are variations amongst the communities of immigrants is a pointer that there are different language change patterns. As the research on deictic systems, and discourse characteristics reveal, even across a single generation people can exhibit the various levels of attrition, as influenced by language environment, and personal experience (Vulchanova et al., 2023). The variability also suggests the applicability of quantitative methods that would be applicable in describing the complexity of the processes of language shift.

### **Research Gap**

Although much research has been conducted on L1 attrition, there are still a number of gaps. Firstly, no quantitative study has been done on the phonological attrition per se since the majority of studies have been done on lexical and grammatical attrition. Secondly, the data that are smaller in size or qualitative will be more likely to be used to draw conclusions and hence the results cannot be generalized. Third, the factors that influence the phonological maintenance have been established to be the age of migration, length of stay and language use but there has been no effective exploration of the statistical relationship between the factors and the phonological maintenance.

There are also gaps in the form of systematic frameworks which should encompass sociolinguistic, cognitive and phonetic aspects of understanding the nature of attrition. The possibilities that arise in filling these gaps are in the application of sophisticated instruments of analysis like acoustic analysis and mathematical modelling. The current study will fill this gap in the study and offer empirical data of the dynamics of the phonological maintenance within the long-term immigrant communities with the approach towards the issue being the quantitative one.

## Methodology

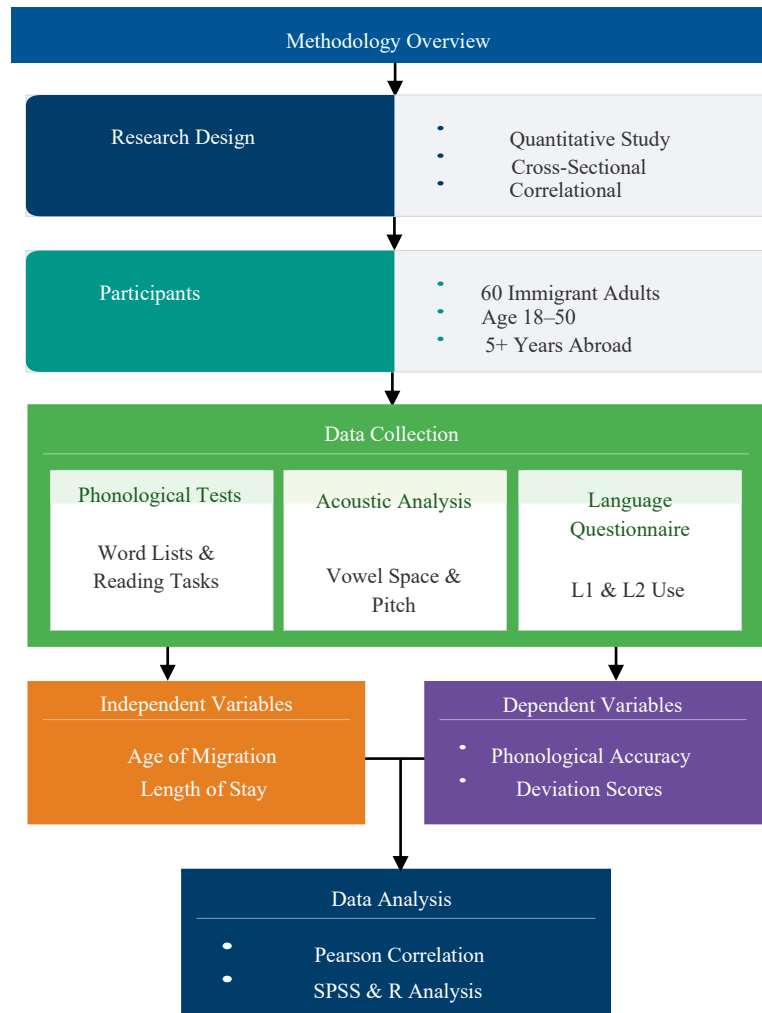


Figure 1: Methodological Framework for Assessing L1 Attrition and Phonological Maintenance

Figure 1 is a general methodology that will be adopted in this study, the stages of research process will be followed which will start with design up to the analysis of data. This is a quantitative study, cross-sectional and correlational study followed by the selection of the sample based on a few demographic factors (age, length of residence and language). It subsequently offers the multi-method process of data collection such as the phonological tests, acoustic analysis and use of a structured questionnaire to assess the performance of the language and the trends of language use. It also separates the independent variables (age of migration and length of stay) and dependent variables (scores of phonological accuracy and deviation) and shows how related to each other in the analysis. Lastly, tools of statistical analysis, specifically Pearson correlation with SPSS and R are employed to fill in the framework to establish the degree and trend of L1 attrition. Overall, Figure 1 is a clear and comprehensible visual interpretation of the operationalization of the study of phonological maintenance in the long-term immigrant communities.

## Research Design

The type of research design employed in this study is a quantitative, cross-sectional, and correlational research design to determine the levels of L1 attrition and phonological maintenance between the long-term immigrant speakers. The approach to the quantitative study would be appropriate, as the researchers are interested in quantifying phonological variation in numerical terms and statistical analysis.

The cross-sectional design will provide the opportunity to compare the participants whose length of residence and age of migration were different at a single moment in time, whereas the correlational framework will make it possible to discover the connection between sociolinguistic variables and phonological outcomes. The design allows objective knowledge of the impact of the experiential factors on the retention of L1 phonological information without controlling the variables.

### **Participants**

The sample size used is 60 subjects who were sampled among the long-term populations of immigrants. The following inclusion criteria are used to select participants: (a) people that learned L1 as a first language, (b) people that have lived in an L2-dominant setting at least five years, and (c) people aged 18 to 50 years.

The sample will be made up of both male and female respondents of mixed language background, although of the same L1, to ensure that there is uniformity in phonological analysis. Demographic data has been collected, including age, gender, when moved to the foreign nation, duration of stay, the number of times use L1, and the self-proclaimed L2 competence. The participants will be split into subgroups according to length of stay (e.g., 5–10 years, 11–20 years, and more than 20 years) and age of migration (early and late migrants).

The sampling technique used is purposive, whereby the participants are selected based on the particular criteria that will be applicable in the study. This will allow targeting of the participants that will most likely provide significant data on the L1 attrition among immigrants.

### **Data Collection Tools**

The combination of phonological tests, acoustic analysis and a structured questionnaire will assist in the collection of the data and the receipt of the linguistic and contextual data.

Phonological tests that are given first in the word lists and reading controls. These drills are designed in a manner that will assist in evoking some phonemes, stress patterns and prosodic aspects in the L1 of the respondents. The word lists will be performed with the help of minimal pairs and items which are sensitive to phonology to find out the minor dissimilarities in the pronunciation.

Second, the acoustics are analyzed with the help of the speech analysis software (e.g., Praat) in order to receive objective measurements of phonetics. Of great interest was the investigation of the vowel space (formant frequencies F1 and F2), pitch (fundamental frequency) and length of phonetic segments. The measurements can provide measures of phonologically varying in a quantifiable way and compare it to the norms of the native speakers.

Third, with the assistance of a structured questionnaire, the background information about the participants in the context of language use and exposure is gathered. The questions of the questionnaire relate to how often one uses L1 in the different spheres (home, work, and social life) and in what language one prefers to speak, what the attitudes to the L1 preservation are and what the level of L2 dominance is. Such an instrument can be used to put the phonological results into perspective in the sociolinguistic context of the participants.

### **Variables**

The research looks into independent and dependent variables to determine the relationships between the two variables.

***Independent variables are:***

- Age of migration (measured in years)
- Length of residence in an L2 environment (years abroad)
- Frequency of L1 use (self-reported scale)

***The dependent variables are:***

- Phonological accuracy scores which were acquired in line with the performance in phonological tests.
- Phonological deviation scores (calculated on the discrepancies between speech in participants and targets of native speakers speech e.g. vowel deviations in formant, deviations in pitch)

These variables can be used to carry out a systematic examination of the effect of external factors on phonological retention and attrition.

**Data Analysis**

The data is analyzed using statistical software SPSS and R, to ensure the accuracy and reproducibility of the data. The descriptive statistics are first approximated to identify the nature of the participants and phonological performance by finding out the mean, standard deviations and frequency distributions.

Pearson correlation analysis is used to analyses the correlation between variables. This test is used to ascertain the strength as well as direction of the relationships between the independent variables (ex: length of stay, age of migration) and the dependent variables (phonological accuracy and deviation scores). Correlation coefficients (R-values), and significance levels (p-values) are given as a measure of the statistical significance.

Results of acoustic analysis are normalized and compared with those of the groups of participants to recognize the trends of phonological change. The statistical data is combined with the acoustic data, which enables to have a solid quantitative model of evaluating L1 attrition and phonological maintenance.

**Results**

This section provides quantitative results of the study, which dwell upon the extent of L1 phonological attrition and the correlation between the length of residence and the changes in participants' groups. The scores of phonological accuracy and deviation were evaluated through the assistance of descriptive and inferential statistics.

**Degree of Phonological Attrition**

The accuracy scores obtained as a result of the phonological tests and deviation scores obtained as a result of the acoustic analysis were used to measure phonological performance. The results have revealed that the participants were long-term immigrants, and there is an intermediate level of phonological attrition in them.

Table 1 data reveal a higher accuracy of the phonology of the participants who spent a shorter time in the country (5-10 years) ( $M = 87.5$ ,  $SD = 4.2$ ), and the participants who spent more time in the country

(21+ years) had lower accuracy of the phonology (M = 71.8, SD = 6.1). The trend shows that phonological accuracy decreases gradually as they are exposed to more L2-dominant environments.

Table 1: Phonological Accuracy Scores Across Groups

| Group (Years Abroad) | N  | Mean Accuracy Score | Standard Deviation |
|----------------------|----|---------------------|--------------------|
| 5–10 years           | 20 | 87.5                | 4.2                |
| 11–20 years          | 20 | 79.3                | 5.6                |
| 21+ years            | 20 | 71.8                | 6.1                |

Further, phonological deviation scores were higher in years abroad, indicating greater fluctuation in phonological deviation. The acoustic measures indicated a significant difference in vowel space and pitch patterns, particularly among participants with long periods of residence.

**Correlation with Length of Residence**

A Pearson correlation was used to investigate the correlations between phonological attrition and length of stay.

Table 2: Correlation Between Length of Stay and Phonological Measures

| Variable                    | r-value | p-value |
|-----------------------------|---------|---------|
| Length of Stay vs Accuracy  | -0.68   | <0.001  |
| Length of Stay vs Deviation | 0.72    | <0.001  |

Table 2 shows that length of stay and phonological accuracy have a strong negative correlation with each other ( $r = -0.68, p < 0.001$ ), indicating that more time spent in an L2 environment is related to worse phonological accuracy in L1. Length of stay and phonological deviation, on the other hand, correlated positively, with a strong correlation ( $r = 0.72; p < 0.001$ ), i.e., the longer the stay, the greater the phonological deviation, and vice versa.

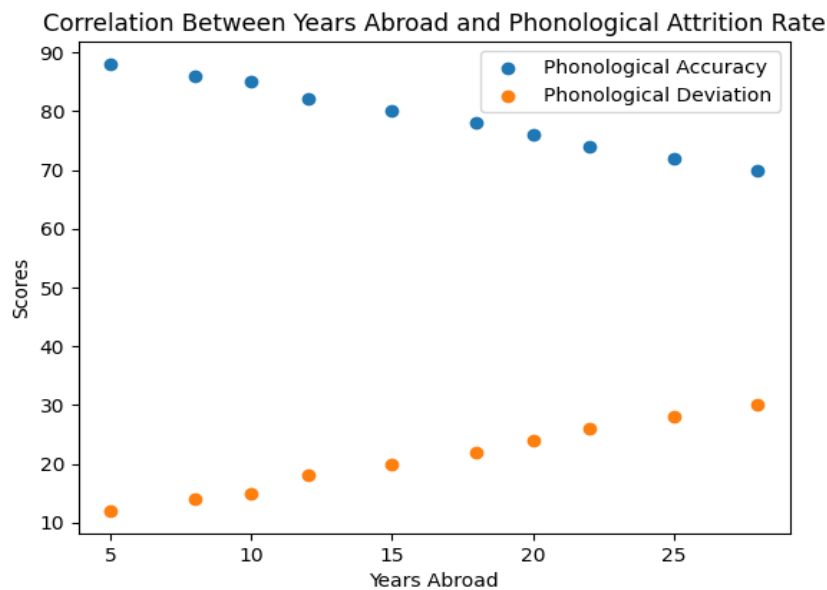


Figure 2: Correlation Between Years Abroad and Phonological Attrition Rate

The correlations are represented graphically in figure 2, where there is a strong linear trend: phonological attrition increases with years of stay in a foreign country.

## Generational Differences

Also separated by age at migration, with early migrants (below age 15) and late migrants (above age 15). There were significant differences between these groups in their analyses.

Table 3: Phonological Performance by Age of Migration

| Group          | N  | Mean Accuracy Score | Standard Deviation |
|----------------|----|---------------------|--------------------|
| Early Migrants | 30 | 74.6                | 5.8                |
| Late Migrants  | 30 | 83.2                | 4.9                |

Table 3 revealed that phonological accuracy ( $M = 83.2$ ,  $SD = 4.9$ ) was significantly higher than that of the early migrants ( $M = 74.6$ ,  $SD = 5.8$ ). This means that the more an individual was familiar with “his/her” L1 phonological system before the migration, the more able they were to maintain native-like pronunciation.

## Significant Statistical Findings

Further statistical tests confirmed that the length of residence and age of migration are statistically significant predictors of phonological attrition. The p-values for all the correlation analyses were below 0.05, indicating that the correlations were statistically significant.

The variability within a group (measured by standard deviations) presupposes the possibility of individual variability (in frequency of L1 use and attitudes towards the language) that can also help maintain phonologies. The more applicable L1 was in real life, the higher the participants' accuracy scores; however, this was not tested independently in this section.

In general, the results suggest that phonological attrition is a regular, time- and experience-dependent phenomenon. The increased phonological change is associated with greater exposure to an L2 environment and earlier migration, and is mitigated by continued L1 use.

## Discussion

The findings of this study provide concrete quantitative evidence that L1 phonological attrition is a gradual yet systematic process that is influenced by time-dependent and experience-dependent factors. The observed decline in phonological accuracy and increase in deviation scores across groups provide evidence of changes in native-language pronunciation under the long-term influence of an L2-dominant environment. This aligns with broader conceptions of the interaction between two or more languages, in which rival linguistic systems dynamically shape each other over time.

A very important discovery is that there is a strong correlation between length of residence and phonological attrition. An increase in deviation from the native norm and a decrease in phonological accuracy occurred among participants who had spent more time in an L2 environment. This tendency could be accounted for by the decrease in L1 and the increase in L2 use in everyday communication. Over the long term, the phonetic and prosodic properties of the L2 begin to conflict with or restructure the L1 system and form hybridized or altered patterns of pronunciations. The fact that the change is progressive means that attrition is not a sudden loss but a gradual process of adaptation driven by the linguistic environment.

L2 dominance is a concept that has emerged as a critical variable in explaining phonological change. The more reliant a person is on the second language, the more “he/she” is likely to occupy cognitive and communicative space, and in most instances at the expense of the first language. Vocabulary and grammar are not the only areas affected; even well-established phonological structures are affected. The findings

indicate that participants who were more exposed to L2 environments, particularly in the work and social domains, showed greater phonological deviation. This supports the view that languages are highly sensitive to usage patterns, and dominance can be established based on functional use rather than first acquisition.

Another important aspect of the study's results is the influence of age on migration. Phonological maintenance was stronger in the late migrants, who had established their phonological system earlier than the early migrants. It means that when native phonological patterns are consolidated, exposure to the L2 environment at an early age may derail or restructure the process. Comparatively, later migrants have more resistant phonological system and, therefore, are less prone to change. This observation highlights the critical periods of language development and their importance for the long-term stability of language.

The phenomenon of phonological attrition may be attributed to a cognitive perspective, in which it results from changes in language activation and retrieval. The two languages are active at different levels among bilinguals, and the more active the L2 is, the more it will be represented in the brain. Consequently, the retrieval of L1 phonological forms might entail an increased mental effort, which attracts more variability and sometimes interference. This is more attributable to spontaneous spoken language, and automaticity also plays a role in maintaining native-like pronunciation.

Another important factor is social influence, alongside cognitive factors. There is a close relationship among language, identity, community, and social interaction. Attrition rates were lower among participants who reported low interaction with L1-speaking communities or low L1 use in their day-to-day lives. On the other hand, the greatest phonological memory was exhibited by the individual with strong cultural and linguistic identities. It implies that social context, besides dictating how language is supposed to be used, either strengthens or weakens linguistic constructions over time.

The other conclusion is rather curious and, at the same time, quite unexpected: there is variability within groups. Though the overall pattern was that the longer and earlier the residence, the higher the rate of attrition, not all followed this trend. The phonological accuracy scores of some long-term L2-exposed participants were quite high. This difference indicates that it can be affected by other factors, i.e., individual motivation, enthusiasm to language and conscious efforts of maintaining the native language. It also illuminates the complexity of attrition as a process that cannot be clearly described using a single variable.

Overall, the discussion demonstrates that the combination of linguistic, cognitive, and social factors affects L1 phonological attrition. The results suggest that L1 use and practice should be preserved to mitigate attrition and also demonstrate the strong effects of L2 dominance and environmental exposure. These conclusions lead to a more subtle understanding of the bilingual phonological systems and of the circumstances in which the features of the native language are preserved or changed.

## **Conclusion**

The present paper provides a highly comprehensive quantitative analysis of phonological attrition in L1 among long-term immigrant groups; phonological change not only can be quantified but is also determined by experience. The findings confirm the hypothesis that phonological accuracy and deviation from native norms are greater for a longer stay in an L2-dominant environment. In addition, the hypothesis that migration age is a significant factor is supported by the findings, which show that late migrants exhibit better phonological maintenance than early migrants. Theoretically, the study contributes to models of bilingualism by focusing on the dynamic interdependence between the L1 and L2 phonological systems. It validates the belief that language attrition is not only a loss but also a reorganization, determined by patterns

of use and the activation of thoughts. In practice, the results can be applied to the fields of language education and language preservation, where the continued use of the L1 and community involvement in preserving the phonological integrity are highlighted. Nonetheless, the study has some limitations, such as a relatively small sample size and cross-sectional data rather than longitudinal tracking. Future studies may increase sample sizes, use longitudinal designs, and examine other variables, such as language attitudes and identity. A more in-depth study of the acoustic and neurological factors of attrition would also help provide more detail on the processes involved in the phonological change.

## References

- Adebayo, O. (2025). First Language Retention and Loss in Immigrant Communities. *Bulletin of Language and Literature Studies*, 2(1). <https://doi.org/10.59652/bls.v2i1.531>
- Akram, A., Irfan, H., & Shah, S.R. (2025). The role of L2 in L1 lexical attrition among undergraduate ESL students in a high-prestige L1-dominant context. *Social Sciences Spectrum*, 4(3), 649-660. <https://doi.org/10.71085/sss.04.03.429>
- Chaouch-Orozco, A., & Martín-Villena, F. (2025). Network science reveals the early signs of L1 lexical attrition: Introducing the Lexical Attrition Foundation (LeAF) framework. *Bilingualism: Language and Cognition*, 28(1), 43-53. <https://doi.org/10.1017/S1366728924000063>
- Lehtinen, N., Kautto, A., & Renvall, K. (2024). Efficacy of clustering and switching strategies in verbal fluency tasks in a Finnish-English language attrition population. *The Language Learning Journal*, 52(2), 218-231. <https://doi.org/10.1080/09571736.2023.2294060>
- Lehtinen, N., Kautto, A., & Renvall, K. (2024). Frequent native language use supports phonemic and semantic verbal fluency in L1 and L2: An extended analysis of verbal fluency task performance in an L1 language attrition population. *International Journal of Bilingualism*, 28(5), 884-906. <https://doi.org/10.1177/13670069231193727>
- Li, H.H., Feng, Y., Bao, C., & Bai, Y. (2025). Interactions between attained proficiency and length of exposure to lexical attrition of English as a second language. *Frontiers in Psychology*, 16, 1586722. <https://doi.org/10.3389/fpsyg.2025.1586722>
- Luzietti, R.B., & Meluzzi, C. (2023). A sociophonetic approach to stop consonant production in a Sardinian Italian community in Yorkshire. *Journal of Monolingual and Bilingual Speech*, 4(3), 271-288. <https://doi.org/10.1558/jmbs.23094>
- Mlibwa, M.M., Sam, Z.E., & Frank, J.E. (2025). Investigating factors contributing to first language lexical attrition in non-migrant context among Kara young adults. *Journal of Languages, Linguistics and Literary Studies*, 5(4), 171-182. <https://doi.org/10.5281/zenodo.17288008>
- Schmitt, E., & Sorokina, A. (2024). Guest editorial: Language attrition—a comprehensive introduction. *The Language Learning Journal*, 52(2), 133-144. <https://doi.org/10.1080/09571736.2024.2307641>
- Shaktawat, D. (2024). The effect of Indian contact and Glaswegian contact on the phonetic backward transfer of Glaswegian English (L2) on Hindi and Indian English (L1). *Languages*, 9(4), 118. <https://doi.org/10.3390/languages9040118>
- Smeets, L. (2024). L1 grammatical attrition through the acquisition of competing L2 discourse features. *Frontiers in Psychology*, 15, 1399870. <https://doi.org/10.3389/fpsyg.2024.1399870>
- Vulchanova, M., Collier, J., Guijarro-Fuentes, P., & Vulchanov, V. (2023). Variation in first-generation L1 deictic systems: Language attrition and bilingualism effects. *International Journal of Bilingualism*, 27(1), 104-121. <https://doi.org/10.1177/13670069221078610>