

INTERFERENCE AND TRANSPOSITION IN THE SPEECH OF JAPANESE SPEAKERS OF RUSSIAN

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Abstract

The purpose of the study is to describe, based on a comparative typological analysis, the phenomena of interference and transposition in the speech of Japanese speakers of Russian in terms of segmental phonetics. The main research **methods** are the comparative-typological method, empirical method, method of observation, method of auditory analysis, instrumental methods, and generalisation of obtained results in order to reveal phonetic interference. The analysis of the problem showed the following **results: At the theoretical level**, it was revealed as follows: 1. Palatalisation in the Russian language is the primary articulation while, in the Japanese language, it is secondary, with a lesser degree of intensity. Not all consonants in Russian and Japanese can become palatalised: some sounds in their articulation are already palatal, others always remain hard. 2. The phenomenon of accommodation in the Japanese language is manifested in a different way than it is done in the Russian language. In Russian, accommodation of vowels in the speech flow as a result of coarticulation is always two-sided (progressive, regressive, progressive-regressive) whereas, in Japanese, it is one-sided (progressive only). 3. In both languages, a vowel changes its quality depending on its place in the word with respect to stress, type of syllable and adjacent sounds. Reduced vowels, having a short length and low intensity in an unstressed position, are not fully devoiced. In other cases, the nature of reduction in Russian and Japanese has a considerable difference: different conditions and types of reduction, different positions of reduced vowels — in Russian, unlike Japanese, all vowels undergo reduction. **At the practical level**, the following positions were considered: (1) of Russian palatalised and non-palatalised consonants and the vowels following them; (2) of combinatorial changes in the Russian and Japanese vowels depending on the hard-soft consonant environment; and (3) of Russian unstressed vowels as well as phonetic errors made by Japanese students when they pronounce sounds in these positions. **The results of the study may help in solving** theoretical problems of general, specific, comparative linguistics and general phonetic interference problems as well as contribute to solving practical problems of overcoming a foreign (Japanese) accent by arranging educational materials in textbooks and developing effective methods for overcoming phonetic interference.

Keywords: comparative typology of languages, interference, Russian phonetics, Japanese phonetics, reduction, accommodation, hard consonants, soft consonants.

1. INTRODUCTION

1.1. Setting the Research Problem

In the framework of linguistics, the theory of language contacts is focused on the problems of interference and the specifics of its manifestation in speech in the form of a foreign accent, switching codes that occur during bilingual communication. When learning a foreign language, the main difficulty is not to master it but to fight against one's own — it is necessary to overcome the skills of the native language, since they distort the facts perceived from the foreign language. The basic prerequisite for interference is in the fact that, when speaking a second language, bilinguals use their native language skills; however, these skills may be helpful or lead to errors the foreign language. The term **interference** usually refers to the negative influence exerted by the native language on the target language (i.e. **negative interference**) leading to errors and distortions.

However, some scientific sources indicate the presence of **positive interference** (the so called **transposition**, i.e. a positive transfer of the skills of the native language to the skills of the target language).

Most bilingual situations are accompanied by the interaction of phonetic systems both in the inventory of their units and in the field of distribution models. At the initial stages of contact cross-language communication, speech segments expressed in a language that is still little familiar are often perceived as under-differentiated. In the natural forms of contact cross-language communications, it is very difficult to analyse foreign speech. In each communicative situation, at the initial stage of bilingualism, a flow of unfamiliar speech falls upon a foreign speaker. Foreign speakers will reproduce the perceived foreign language units as accurately as they will be able to analyse them. Although a person who correctly perceives audible speech in a foreign language does not thereby acquire the skill of reproducing it correctly, one who analyses it incorrectly will never be able to satisfactorily reproduce it.

The impact of the native language sound system on the Russian language system is the greater, the more linearly extended speech segment is considered. If native speakers of other languages can freely operate with individual vowels and consonants, then in the simplest sound chain — syllable — the interfering effect is already quite significant, and the word most often contains orthoepic errors.

Therefore, the study of phonetic interference should be based on a comparative typological description of the phonetic phenomena of these languages and an analysis of their discrepancies in order to identify areas of Russian-Japanese interference and transposition, which in this paper are exemplified by accommodation and reduction of vowels as well as palatalisation and velarisation of consonants.

1.2. Literature Review

In Russian science, the issues of palatalisation and velarisation of consonants as well as reduction and accommodation of vowels were considered in the works of Bondarko (1977), L.L. Bulanin (1970), L.G. Skalozub (1980), I.M. Loginova (1992, 2001, 2017), L.A. Verbitskaya (1976) and others).

The phonetic system and articulatory base of the Japanese language are described in the studies of Starostin (2000), V.V. Rybin (2011), H. Kubozono *et al.* (2015), N. Tsujimura (2014), L. Labruno (2012), T.J. Vance (2008), M. Kondo and others.

In comparison with the Japanese language, Russian segmental phonetics in the aspect of Russian-Japanese interference is presented in Russia in the works of I.M. Loginova (2001, 2017), V.V. Cherepko's Ph.D. thesis (2018) and other works of these authors.

Despite the available scientific works on Russian and Japanese phonetics, comparisons of these phonetic systems as well as Russian-Japanese interference and transposition are very scarce; therefore, the topic stated in this paper is still insufficiently developed and can be considered relevant.

2. METHODOLOGY

The experiment conducted by us in 2015–2017 in Moscow involved 51 Japanese informants: 28 men and 23 women aged 19 to 32 years. All of them were native Japanese speakers of different dialect groups with different levels of English or other foreign language proficiency. 96% of them were students of Japanese universities and, at the time of the experiment, they were having language training at Russian universities.

The participants were asked to read two texts (one known and one unknown to them) and answer related questions. The texts belonged to different functional styles of the Russian language. Depending on the level of language proficiency, the text size ranged from 40 to 360 words. As a result, we recorded over 100 audio materials. We analysed the audio recordings of the Japanese informants using Speech Analyzer 3.1, a computer program for acoustic analysis of speech sounds, which makes it possible to work with spectrograms and oscillograms.

Other research methods included the comparative typological method, structural method, descriptive method, distribution analysis method, empirical method, observation method, auditory analysis method, instrumental methods, prognostic method (modelling method), and generalisation of the analytical results in order to detect phonetic interference.

3. DISCUSSION

3.1. Palatalisation and Velarisation

An essential feature of the Russian and Japan languages is the phonological opposition of consonants on

the basis of their hardness or softness. Palatalisation in the Russian language is *the primary articulation* (Skalozub, 1980, p. 20–21). In Japanese, palatalisation is *an additional articulation* which is performed simultaneously with the primary articulation but involves a *smaller degree of intensity* (Vance, 2008, p. 19).

In Russian, 15 correlative pairs are opposed according to palatalisation/non-palatalisation: [б-б', п-п', в-в', ф-ф', д-д', м-м', з-з', с-с', г-г', к-к', х-х', л-л', м-м', н-н', р-р']. Outside this series are the always hard [ж, ц, ш], always soft [щ, ч] and palatal [й] which is neither hard nor soft, with the main mediolingual articulation. The consonants [к'], [г'], [х'] are already soft according to their formation (Bondarko, 1977, pp. 85–86).

In Japanese, 13 correlative pairs are opposed according to their hardness/softness: [b] – [b'], [p] – [p'], [w] – [w'], [ɸ] – [ɸ'], [d] – [d'], [t] – [t'], [g] – [g'], [k] – [k'], [ŋ] – [ŋ'], [h] – [ç'], [m] – [m'], [n] – [n'], [r] – [r']. Outside this series are the hard [ɕ, z, ts, s], soft [ɕ', ʃ, tʃ'], and palatal [j] with the primary mediolingual articulation (Kubozono, 2015, p. 6; Rybin, 2011; Starostin, 2000, p. 68). Japanese palatalised consonants are transcribed with the superscript [ʲ]. The alveopalatal and palatal consonants [ɕʲ], [j], [çʲ], [ʃʲ], [tʃʲ], are formed in the area of the hard palate and in some sense are already palatalised; therefore, they are not transcribed with the superscript [ʲ]. In turn, the formation of the alveopalatal affricates [ɕʲ], [tʃʲ] is caused by palatalisation of the alveolar fricatives [z], [s] and alveolar affricates [ɕ], [ts]. Examples of palatalised consonants in Japanese can be the words *ryokan* [rʲokan], *kyaku* [kʲaku], *sanbyaku* [sambʲaku] (Tsujiyama, 2014, p. 7).

3.2. Accommodation

Accommodation as a process is determined by a different degree of assimilation of a consonant (C) to a subsequent vowel (V). At the maximum of assimilation (complete assimilation is impossible), *glides* arise between the neighbouring C and V interacting in the speech flow (Loginova, 2001, p. 302). There are **four basic accommodation positions**: CVC, C'VC, CVC', C'VC' (where C is any hard consonant, C' is any soft consonant, V is any vowel) (Loginova, 2017, p. 194).

The influence of vowels on preceding consonants is due to the fact that closed front vowels can cause **palatalisation of consonants** (labial, dorsal and postdorsal ones). Traditionally, it is believed that a vowel (especially non-front one) in the neighborhood of a soft consonant moves forward along the row and often becomes more closed (that is, in terms of the rise), and on the part of the soft consonant, *[u]-shaped transitional section* appears in the neighboring vowel, thus turning it into a **diphthongoid** (Loginova, 2017, p. 194). Thus, the functioning of the hardness-softness category leads to a *complex heterogeneity* of Russian vowels in the speech flow in terms of lingual and labial articulations: all vowels are phonetically **diphthongoid** and **triphthongoid** in different positions (Loginova, 2017, p. 181).

The phenomenon of accommodation can act in different directions and can be **progressive** (from a preceding consonant to a succeeding vowel, e.g. in Russian: *ляг* 'lie down!', *лес* 'forest', *люк* 'hatch'), **regressive** (from a succeeding vowel to a preceding consonant, e.g. in Russian: *дали* '(they) gave', *о доме* 'about home', *о луке* 'about a bow') and two-sided, i.e. **progressive-regressive** (vowel mutation of under the influence of both preceding and subsequent consonants; this is the most prominent mutation of a vowel, e.g. in Russian: *мяли* '(they) rumbled', *о мёде* 'about honey', *о люке* 'about a hatch') (Loginova, 2017, p. 192).

Consonants in Japanese are opposed according to their hardness or softness, however, the open syllable law regulates the degree of adjunction of a consonant to a vowel: strong adjunction in CV-sequences (Loginova, 2017, p. 192) (bright **progressive accommodation** from a consonant to a vowel, e.g.: *hiru* 'day', *mise* 'store, shop') and weak adjunction in VC-sequences (with almost no **regressive accommodation**, which also manifests itself in interference, e.g.: *hebi* 'snake', *maki* 'roll, scroll').

3.3. Reduction

In Russian phonetics, it is customary to distinguish between **two types** and **two degrees (grades) of reduction** of unstressed vowels. The **types of reduction** are understood as **quantitative** and **qualitative** reduction. This contraposition makes it possible to represent the system of Russian vocalism as a binary opposition: *vowels of high and non-high rise*. The functional basis for this classification is that the high vowels [u], [ʏ], [y] in an unstressed position mainly undergo **quantitative** changes and the non-high vowels [a], [o], [e], [ɛ] undergo **both quantitative and to a large extent qualitative** changes. Thus, the system of vocalism can be represented using two binary oppositions that determine the functioning of sound units: vowels *front* ([u], [e]) and *non-front* ([ʏ], [ɛ], [a], [y], [o]), *high and non-high* (Loginova, 1992, pp. 93–94).

The second characteristic feature of Russian unstressed vocalism is **the distinction between two degrees of reduction**. It is traditionally believed that a two-grade manifestation is characteristic of both qualitative and

quantitative types of reduction.

The two-grade qualitative reduction of most vowels reduces to a one-grade opposition of stressed and unstressed vowels: [u], [e], [o], [a] → [u]; [ɨ], [ə] → [ɨ] ([ɨ]); [y] → [y]. The unstressed [u], [ɨ], [y] in comparison with stressed vowels are more open according to the rise; the degree of change in their rise is only one (Bondarko, 1977, p. 156). Only the vowels [a], [o] after hard consonants that change identically in unstressed syllables undergo two-stage qualitative reduction: they become more closed, [ʌ], in reduction grade I and even more closed, [ɤ], in reduction degree II (Verbitskaya, 1976, pp. 52, 86; Loginova, 1992, pp. 101–102).

The quantitative reduction of unstressed vowels is a variable sign in the speech flow, which is caused by various factors. The length of the vowel varies depending on the place of the stressed syllable with respect to stress, the position at the absolute beginning, middle or absolute end of the word, in the open or closed syllable, before a single consonant or before a consonant combination, as well as on the quality of the surrounding consonants, the place with respect to phrasal stress, speech tempo, etc. And one more factor that matters is the vowel's own length, which depends on its timbre. The influence of the stressed syllable place on the vowel's length can be compensated by other reasons and conditions of the position. The relationships of stressed and unstressed vowels are somehow regularly maintained in the speech flow only for the open vowel [a] → [ʌ] → [ɤ]. The closed [u], [ɨ], [y] in any pretonic position are approximately twice as short as a stressed sound and do not differ in the degree of reduction in their lengths, thereby demonstrating a one-grade quantitative reduction in unstressed syllables. This is also in full compliance with the qualitative changes of unstressed vowels (Bondarko, 1977, pp. 155–156; Loginova, 1992, pp. 103).

Vowel reduction is mandatory in Japanese. According to the IPA, devoicing (devocalisation) is indicated by the diacritic symbol [̚], e.g. [i̚] or [u̚]. Devoiced vowels in devocalised environments are often of short length and low intensity as compared to full vowels (Kondo, 1997).

In the scientific literature, devoicing of **high vowels** and **non-high vowels** is usually considered. The high vowels [i] and [u] become devoiced in the following contexts: (1) when a vowel (stressed or unstressed) is between two unvoiced consonants (including the first geminated consonant), e.g.: *hiku* [ç̚i̚kɯ] 'pull', *tsuki* [tsɯk̚i̚] 'moon'; or (2) when the unstressed vowel is located after an unvoiced consonant and before a pause, e.g.: *karasu* [karasɯ̚] 'crow', *aki* [ak̚i̚] 'autumn'. The non-high vowels [a] и [o] are also devoiced but more rarely and under more limited conditions. The vowels must be unstressed, placed between two unvoiced consonants and, in addition, the same vowel must occur in the succeeding mora, e.g.: *kokoro* [kɔ̚kɔ̚] 'heart', *haka* [hɔ̚kɔ̚] 'sepulchre'. The non-high vowel [e] is least affected by devoicing, e.g.: *sekkaku* [sɛ̚kkakɯ̚] 'purposely', *kesho* and [kɛ̚ʃo̚] 'compile' (Labruno, 2012, pp. 34–35).

4. RESULTS

In our study, we focused on the positions of unstressed vowels as well as on phonetic mistakes made by Japanese students when they pronounce sounds in these positions. The phonetic letters represent the pronunciation of words by the foreign speakers; the bold type marks phonetic mistakes; the stress is not shown in some words, since the informants did not indicate it. In this paper, we use the Russian transcription based on the Cyrillic alphabet. Let us consider some examples of violations in palatalisation, velarisation, accommodation, and reduction.

4.1. Consonant Palatalisation

In Russian, **non-palatalised consonants** are found in the position before the vowels [a], [o], [y]. Positions in which these sounds are unstressed do not present problems for native Japanese speakers. As a rule, all foreign students have difficulties in pronouncing **the vowel [ɨ]**. As it was expected, due to the absence of this sound in Japanese, the preceding consonants were softened but, unlike the Russian language, with a lesser intensity; for this reason, the sound [ɨ] was pronounced anywhere from [ɨ] to [u], e.g.: *вызвана* [v̥'uzvʌnʌ] 'caused by', *шире* [ɕ'ur'e] 'wider, broader'. When **the sound [ə]** was pronounced, the preceding consonant became palatalized; the sound [ə] was accordingly substituted for [e], which was due to the specifics of the Japanese phonetic system, e.g.: *жена* [ʒ'e'nʌ] 'wife', *экспресс* [ɛksp'ɛs] 'express (train)'.

Palatalised consonants in the Russian language are found in the following provisions (Bulanin, 1970, pp. 57–58). At the word end and before some consonants, the softness of the consonants is indicated in writing by the letter ь (except for [ʒ], [ɕ] and [ʧ], [ʧ']). In the words *Кремль* [kr'emp'ɯ] 'the Kremlin', *хоть* [xɔt'ɯ] 'though', *ходил* [xɔd'ɯl] '(he) walked' this rule was violated due to the transfer of Japanese language rules to Russian. In the articulation of **the vowels [a], [y], [o], [u], [e]** in the position after a soft consonant, sufficiently developed skills were found in pronouncing these sounds in various positions in the word, e.g.:

время [вр'ем'а] 'time, всю [фс'у] 'all', Снегиревым [Сн'ег'ур'б'вым] '(by) Snegiryov', рисовал [р'усов'ал] '(he) drew, университет [ун'ив'ерс'ум'ем] 'university'. Due to the lack of **assimilation of consonants by their hardness/softness** in Japanese, no consonant was palatalised in the following examples: здесь [зд'ес'] 'here', трудностей [труд'наст'ей] '(of) difficulties'.

4.2. Accommodation

Depending on the phonetic feature (row, rise, labialisation), there are 3 types (groups) of stressed vowel accommodation (Loginova, 2017, pp. 191–220).

The **first group** includes the opposition of the vowels [у – ы], which vary only in terms of **the row**, and the opposition of the vowels [е – э], which vary in terms of **the row and rise**. In words with **the vowel [у]** in the CVC position, no cases of the misused [и^б] shade were found, e.g.: говорю [гавар'ум] 'says', красивый [крас'ивый] 'handsome'. When **the vowel [ы]** was pronounced in the CVC position, the preceding consonants became palatalised (in addition to the lesser degree of intensity mentioned above), e.g.: сына [с'ина] '(of) a son', был [б'ул] 'was'. In words with **the vowel [е]** in the CVC position, no cases of the misused [е^а] shade were found, e.g.: девушки [д'евуск'у] 'girls', отец [ам'ец] 'father'. In the articulation of **the sound [э]**, the preceding consonant was palatalised and, accordingly, [э] was replaced by [е], e.g.: уже [уж'е] 'already', теннис [м'енн'ис] 'tennis'.

The **second group** deals with the opposition of the vowels [у – о] according to their **labialisation** and row. Due to the weakly expressed labialisation in their native language, the Japanese students had insufficient lip articulation activity, e.g.: будут [б'удум] '(they) will be', работа [раб'ота] 'work, job'.

The **third group** includes the vowel [а], which, in accommodation positions, changes mainly in its **row** and (to a lesser extent) in its **rise**. In the pronunciation of the vowel [а] there were no cases of misuse of its shades: завтра [зав'утра] 'tomorrow', погулять [погул'ат'] 'to have a walk'.

4.3. Reduction

When the reduced **non-high vowels [а, э]** were analysed, the following errors were revealed: (1) when the unstressed vowel [а] followed a **hard consonant**, there were no errors in cases where the grapheme “а” and the sound [а] coincided but, in some cases, when the sound [а] was represented by the grapheme “о”, it was pronounced according to its spelling, i.e. as [о], e.g.: обязательно [об'изат'ел'но] 'necessarily', гостинице [гост'ин'ицэ] '(in) a hotel'; (2) in the articulation of the unstressed vowel [а] **after soft consonants** there were no errors in pronunciation, e.g.: наряду [нар'уду] 'along with', месяца [мес'уца] '(of) a month'; (3) when the unstressed vowel [э] followed a **hard consonant** in the place of the grapheme “е”, this consonant was palatalised and [э] was replaced by [е], e.g.: жена [ж'енá] 'wife', наше [наш'е] 'our(s)'.

When the reduced **high vowels [у, и, ы]** were analysed, the following errors were revealed: (1) in the pronunciation of the unstressed vowel [у] **after hard and soft consonants**, a partial loss of labialisation was noted, e.g.: устал [устал] '(he) got tired', туриста [тур'иста] '(of) a tourist'. (2) in the articulation of the unstressed vowel [у] **in the absolute beginning of the word**, there were no cases of incorrect use of this sound; however, **after a soft consonant** in the place of the grapheme “е”, in the first and second pretonic as well as posttonic and absolute final positions, the vowel does not undergo reduction and is pronounced as the full-voiced [е], e.g.: исходит [исх'од'ум] '(he) comes from', неправильно [н'епрае'ул'на] 'wrongly', фонетически [фонэт'ич'еск'у] 'phonetically', на горизонте [гор'изонт'е] 'on the horizon'. (3) in the representation of the unstressed vowel [ы], in almost **all cases**, the preceding consonants were palatalised and the vowel [ы] was pronounced as [й], open and out-back, e.g.: была [б'ура] '(she) was', выделять [в'удер'ат'] 'to distinguish'.

5. CONCLUSIONS

Summing up the comparative typological description of the Russian and Japanese languages as well as the analysis of the Japanese phonetic accent, we find it necessary to note the following findings.

At the theoretical level, it was revealed as follows: 1. Palatalisation in the Russian language is the primary articulation while, in the Japanese language, it is secondary, with a lesser degree of intensity. Not all consonants in Russian and Japanese can become palatalized: some sounds in their articulation are already palatal, others always remain hard. 2. The phenomenon of accommodation in the Japanese language is manifested in a different way than it is done in the Russian language. In Russian, accommodation of vowels in the speech flow as a result of coarticulation is always two-sided (progressive, regressive, progressive-regressive) while, in Japanese, it is one-sided (progressive accommodation only). 3. In both languages, a

vowel change its quality depending on its place in the word with respect to stress, type of syllable and adjacent sounds. Reduced vowels, having a short length and low intensity in an unstressed position, are not fully devoiced. In other cases, the nature of reduction in Russian and Japanese has a considerable difference: different conditions and types of reduction, different positions of reduced vowels — in Russian, unlike Japanese, all vowels undergo reduction.

At the practical level, the following positions were considered: (1) of Russian palatalised and non-palatalised consonants and the vowels following them; (2) of combinatorial changes in the Russian and Japanese vowels depending on the hard-soft consonant environment; and (3) of Russian unstressed vowels as well as phonetic errors made by Japanese students when they pronounce sounds in these positions. As the analysis showed, phonetic errors in palatalised/non-palatalised consonants made by Japanese speakers of Russian are connected with the distorted differential hardness/softness feature and changed front-soft and back-hard articulation patterns — it is the inability to differentiate between them that causes interference. During the analysis, we also observed examples of a positive transfer of the native language skills to the target language (absence of errors or slight deviations from the norm, i.e. transposition). All these deviations also affect the correct reduction of Russian vowels. As for the reduction itself, it must be said that the inability to distinguish the quality of sounds and their length leads to violations of orthoepic norms as well as to changes in the rhythm of a word or phrase. One way or another, all the three considered aspects of the Russian and Japanese phonetic systems are closely interconnected and influence each other.

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