



PRONUNCIATION AND ORTHOGRAPHY OF AFFRICATES IN INTERVOCALIC POSITION

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Abstract

This article analyzes the use of affricate sounds in the Uzbek literary language and its dialects. Particular attention is paid to orthographic as well as phonetic-phonological issues related to affricate sounds, and several approaches to resolving these problems are proposed. Based on the observations, conclusions are drawn regarding the complex and composite nature of affricate sounds and the manifestation of this feature in different pronunciation processes.

Keywords: Affricate sound, phoneme, phonemic status, velar sound, nasal sound, sonorant, syllabification, orthographic rules.

Introduction

The study of the articulatory and acoustic properties of consonants constitutes one of the central issues of phonetics and phonology. In particular, affricates differ from other consonants due to their complex articulatory nature. An affricate is a complex consonant produced through the integrated realization of two articulatory phases simultaneously — a plosive phase and a fricative phase. In Uzbek, the sounds *ch* and *j* are traditionally recognized as affricates. However, certain phonetic phenomena, especially pronunciation processes occurring in intervocalic position, necessitate a broader interpretation of the structure and functional capabilities of affricates.



Intervocalic position, that is, the occurrence of a consonant between two vowels, represents one of the most active environments for phonetic change. In such contexts, consonants may exhibit lengthening, softening, assimilation, blending, or a tendency toward gemination. The pronunciation of the ng sound is particularly noteworthy in this respect [7, 193]. This article analyzes the pronunciation and orthography of affricates in intervocalic position, with special attention to the articulatory nature of the ng sound and its affinity with affricates. An affricate is a complex consonant formed through the creation of a complete closure followed by its gradual fricative release. For example, in the Uzbek sound ch, the plosive element t and the fricative element sh are pronounced as a single indivisible sound. Therefore, the components of an affricate are not perceived separately.

In Russian linguistics, affricates are classified into single-focus and double-focus types. In double-focus affricates, two resonating articulatory points function simultaneously during pronunciation. In certain cases, this characteristic can also be observed in the ng sound.

One of the principal features of affricates is their short and indivisible pronunciation. According to R.I. Avanesov, affricates cannot be prolonged like plosive consonants; if the second component becomes lengthened, the sound ceases to function as a unified segment and turns into a consonant cluster [1, 83]. In this respect, affricates differ fundamentally from ordinary consonant combinations.

MATERIALS AND METHODS

In intervocalic position, the articulation of affricates becomes more active and perceptible. When affricates occur between two vowels, the plosive component may weaken while the fricative component may become relatively prolonged. For example, in Uzbek words such as kecha, necha, ajab, and vijdon, the pronunciation of affricates varies depending on speech tempo and style.

This phenomenon becomes even more evident in the case of the ng sound. In words such as yangi, tanga, and dangal, the ng sound in intervocalic position demonstrates a blended pronunciation of the n and g components [6, 68]. During this process, the speech apparatus simultaneously activates the nasal resonator



and the velar articulatory zone. As a result, the sound is perceived as a more unified acoustic entity than a simple n+g sequence.

In Uzbek words such as to'nka, alanga, anqov, and qo'ng'iz, the sound n is also realized as ng under the influence of velar consonants. This phenomenon represents a phonetic manifestation of assimilation. The same regularity exists in other languages as well. For instance, in the English words thank [θæŋk], anxious ['æŋksəs], and tranquil ['træŋkwɪl], the sound n is likewise realized as ng due to the influence of velar consonants.

In intervocalic position, the ng sound also displays a tendency toward gemination. Especially in emphatic or slow speech, its second component may be articulated with greater length [5, 120]. However, this lengthening does not result in the emergence of an independent g sound; rather, it strengthens the impression of a unified acoustic entity.

Traditional phonetic interpretations classify ng as a sonorant consonant rather than an affricate. The primary reason for this lies in the fact that both of its components, n and g, possess plosive characteristics. According to the classical definition, an affricate must consist of a combination of plosive and fricative elements.

Nevertheless, from an articulatory perspective, the ng sound also possesses features of a complex-focus consonant. In its production, the nasal resonator and the velar-plosive zone function simultaneously. Moreover, in certain positions the ng sound is perceived as a unified and indivisible acoustic entity. Especially at the end of syllables or words, its release phase weakens and the sound does not "burst out." Consequently, the preceding vowel is perceived with a prolonged resonant tone.

On this basis, the concept of affricates need not be restricted solely to the "plosive + fricative" model. Affricates may be interpreted more broadly as "the unified articulatory realization of two consonantal components." Such an approach allows affricates to be classified into groups such as plosive-fricative affricates and plosive-plosive affricates. This creates a foundation for a deeper investigation into the phonetic nature of the ng sound.

The orthographic representation of affricates does not always fully correspond to their phonetic nature. In Uzbek orthography, affricates or complex consonants such as ch and sh are represented by two letters. Similarly, the ng sound is also



written with two graphemes. However, in pronunciation it often functions as a single phonetic entity.

This discrepancy becomes more apparent in intervocalic position. For example, although the word *yangi* may appear segmentable in writing as *yan-gi*, in pronunciation it becomes unified as [yaŋgi]. The same phenomenon can be observed in words such as *tanga* and *dangal*.

This situation demonstrates the interaction between phonetic and morphological principles in Uzbek orthography. Writing tends to preserve structural segmentation, whereas pronunciation moves toward articulatory convenience and acoustic unity.

The representation of affricates and complex consonants in writing constitutes one of the most complicated issues of Uzbek orthography [11, 132]. This is especially evident in syllabification and line division, where contradictions between phonetic and graphic structure become apparent. In this respect, phenomena related to the *ng* sound deserve particular attention.

Article 78 of the Uzbek orthographic rules adapted to the Latin alphabet explicitly states: “Letter combinations representing a single sound (*sh*, *ch*, *ng*) are transferred together,” providing examples such as *pe-shona*, *pi-choq*, *si-ngil*, and *de-ngiz*. This rule places *ng* alongside *ch* and *sh* as a unit representing a single phoneme [12]. From the perspective of the orthographic system, therefore, *ng* is treated not as a simple letter combination but as a unified phonetic entity.

The same approach was present in the orthographic rules based on the Cyrillic script adopted in 1956. There it was also stated that “the letters *нг*, *ш*, and *ч*, which represent indivisibly pronounced single sounds, are not separated during transfer.” The expression “a single indivisible sound” is particularly significant because it directly characterizes the phonetic nature of *ng* as an articulatorily and acoustically unified entity.

However, in practice this rule also creates certain ambiguities. The *ng* sound does not function as a single phoneme in all cases. In words such as *singil*, *ko‘ngil*, and *dengiz*, *ng* is pronounced as a unified velar nasal consonant. Yet at certain morphological boundaries the *n* and *g* components may remain perceptible as separate segments. For example, in forms such as *men-ga* and *sen-ga*, *n* and *g* function as independent phonemes and cannot be interpreted as *ng*.



Thus, Uzbek syllabification rules indirectly reflect debates concerning the phonetic and phonological status of ng. On the one hand, it is treated alongside ch and sh as a single sound; on the other hand, in actual speech and morphological structure it may sometimes function as two independent segments.

Phenomena related to affricates and letter combinations in Russian provide important comparative material for explaining the status of the Uzbek ng sound. In particular, the Russian affricate ц and consonant combinations such as тс and чш help clarify debates surrounding ng.

In Russian, ц is regarded as a classical affricate. Articulatorily, it is formed through the fusion of the plosive element т and the fricative element с. In pronunciation, however, these are realized not as two separate sounds but as a single phonetic unit. Consequently, ц is represented by a single letter and is not separated in syllabification. Examples include ули-ца, певича, and огурец.

At the same time, Russian also contains the letter combination тс, which does not always correspond to the affricate ц. In words such as от-советский, подсудимый, and дет-ский, т and с remain independent phonemes. In rapid speech they may occasionally resemble ц, but phonologically they continue to function as two separate sounds. Therefore, in writing and syllabification they are divided according to morphological boundaries.

The Russian combination чш also clarifies the issue. In words such as луч-ше, мужчина, and кончивший, the sounds ч and ш occur adjacently. In rapid pronunciation they are often perceived as an elongated blended sound, and articulatory boundaries may weaken considerably. Nevertheless, Russian phonology does not recognize this combination as an independent affricate because its components preserve their morphological and phonemic separability. For this reason, Russian linguistics distinguishes strictly between genuine affricates and affricated consonant clusters. A true affricate constitutes a single phoneme, is pronounced briefly and indivisibly, and functions as a unified unit in writing and syllabification. An affricated consonant cluster, by contrast, emerges from the approximation of two phonemes; although it may sound blended in rapid speech, it retains morphological separability.



DISCUSSION

Problems related to the syllabification and orthographic representation of affricates in intervocalic position, especially in the case of complex consonants such as ng and ts, remain unresolved issues in Uzbek linguistics. In our view, there are three principal approaches to solving this problem.

The first approach involves doubling the intervocalic affricate and representing it across both syllables. Examples include dotsent → dots-tsent and litsey → lits-tsey. The advantage of this approach lies in its more accurate representation of syllable boundaries in pronunciation. In intervocalic position, affricates often belong simultaneously to both syllables and are therefore pronounced with greater strength and length. In the case of ng, the articulatory transition may become especially noticeable, sometimes acquiring a [ŋ:g]-like quality. However, the major drawback of this approach is that it destroys the phonological integrity of the affricate by artificially dividing a single phoneme into two segments.

The second approach interprets intervocalic affricates as ng-g or ts-s. For example, yangi → yang-gi and tanga → tang-ga. This model resembles the affricated pronunciations found in Russian words such as отсеять and детский. Its advantage lies in preserving the complex nature of the affricate while simultaneously reflecting transitional articulation and balancing syllable boundaries with phonetic realization [2, 21]. Nevertheless, the principal weakness of this model is its theoretical ambiguity. An affricate should either function as a unified phoneme or as two independent phonemes; an intermediate status inevitably creates phonological uncertainty and increases orthographic variation. The third approach interprets affricates as combinations of two separate phonemes. According to this model, ts → t+s, ng → n+g, and ch → t+sh. The main advantage of this approach lies in systemic simplification. All complex consonants are segmented into ordinary components, syllabification rules become easier, and consistency between graphic representation and segmentation is strengthened. However, this theory denies the phonetic and phonological nature of affricates. Sounds such as ch, j, and ts are recognized in many languages as independent phonemes and differ articulatorily and acoustically from ordinary consonant clusters.

It should be emphasized that the complex and divisible character of the ng sound becomes particularly evident when it occurs in intervocalic position [9, 48]. In



such contexts, its pronunciation often reveals the very ambiguities that create orthographic difficulties.

For this reason, the orthographic rules concerning ng require reconsideration. Artificial and unnatural syllabification may negatively affect children who are only beginning to learn reading, pronunciation, and writing through syllabic segmentation. For instance, the suffix -ingiz is naturally pronounced and perceived as in-giz. Likewise, when vowel-initial suffixes are attached to words ending in ng, the second component (g) tends to shift into the following syllable. Such pronunciations feel entirely natural to native speakers, especially schoolchildren, whereas alternative explanations may contradict their intuitive linguistic perception.

These issues are not confined solely to education; they also affect publishing, mass media, artificial intelligence, and information technologies. As noted above, the principal difficulties related to ng concern syllabification and line division [8, 341]. The integrity of ng as a unified sound is particularly clear when it occurs adjacent to other consonants, as in tanglay, yanglig^ʻ, tenglama, and manglay. However, when positioned between two vowels, its divisibility demands a different approach.

In our opinion, the issue can be resolved in three ways: by doubling intervocalic ng, by interpreting it as ng-g, or by segmenting it into n and g. The current orthographic rules may reasonably apply only to words such as ko^ʻ-ngil and si-ngil. Professor M. Mirtojyev likewise notes that the ng sonorant appears at the beginning of syllables only in intervocalic contexts, as in ko^ʻngil, singil, and yengil.

However, in words such as dengiz, tanga, yangi, zangi, mangu, rango-rang, zangori, mengiz, jangal, dangal, rangin, ingichka, and many others, transferring the entire ng cluster into the following syllable sounds unnatural. Most Uzbek speakers intuitively pronounce the first syllable as closed and the following syllable as consonant-initial.

The first proposed solution therefore recommends doubling the intervocalic ng. In many dialects and colloquial pronunciations, words are realized as tangnga, yangngi, yengngil, hangngama, and dangngal. This suggests that the approach deserves serious consideration. Similarly, when vowel-initial suffixes are added to words ending in ng, pronunciations such as rang-ngi, teng-ngi, and ong-ngi do



not appear unusual [13, 132]. Nevertheless, this approach also has drawbacks. The emergence of additional ng sequences conflicts with graphic economy and complicates literacy. If orthographic rules prioritized phonetic principles and assigned a separate grapheme (for example, ŋ) to the ng sound, this approach could potentially be implemented.

The second approach recommends representing intervocalic ng as ng+g. Under this model, syllable closure and consonant-initial syllables are represented more transparently. Pronunciations such as deng-giz, dang-gal, and ing-gichka support this solution. Yet this approach also disrupts graphic economy and may obscure morpheme boundaries in forms such as jang-govor, tong-gingiz, and rang-gin.

The third approach recommends segmenting intervocalic ng into n and g. According to this interpretation, ng is regarded as a consonant cluster, and syllabification patterns such as an-gor, den-giz, and kel-san-giz become normative. This approach aligns orthography more closely with actual pronunciation and also corresponds well with the needs of modern information technologies and artificial intelligence systems, which frequently process ng as n+g. Most importantly, it avoids introducing new letters into the alphabet and does not require the republication of existing printed materials.

From a pedagogical perspective, this approach is also more accessible for children who are beginning literacy education. At the same time, it should not imply the complete rejection of the ng sound as an independent phonetic entity. Rather, the sound should continue to be acknowledged in educational materials as a distinct consonantal phenomenon.

Finally, it is worth noting that the representation of ng in the Uzbek alphabet itself lacks consistency. Unlike the sh combination, whose ambiguous cases are clarified through the use of the apostrophe, orthographic rules do not explain under what conditions ng represents a velar nasal sound and when it functions merely as the sequence n+g. This inconsistency further supports the relevance of the third approach.

CONCLUSION

Overall, the three approaches discussed above attempt to provide objective evaluations and practical solutions for adapting the pronunciation of the ng sound



to Uzbek orthography. Determining which approach should ultimately be adopted remains a matter for linguistic consensus.

These approaches also differ in their compatibility with possible alphabet reforms. The first and second approaches would become more viable if a separate grapheme, such as η , were introduced into the alphabet. The first approach, in particular, would strengthen the phonemic status of ng . Although the third approach may be criticized for encouraging the divergence of the ng phoneme, it remains the most adaptable within the current orthographic system. Until major alphabet reforms are undertaken, therefore, the third approach may represent the most practical solution.

The pronunciation of affricates in intervocalic position demonstrates highly complex articulatory processes. In such environments, the blending, gemination, and acoustic unification of components become intensified. The ng sound deserves special attention in this regard.

Although ng does not fully conform to the traditional definition of an affricate, its articulatory and acoustic properties display many affricate-like features. In particular, its complex focus, indivisible articulation, and unified pronunciation make it possible to interpret it more broadly within the category of complex consonants.

Furthermore, the discrepancies between pronunciation and orthography in intervocalic affricates highlight the necessity of investigating phonetics, phonology, and orthography as interconnected domains within Uzbek linguistics. The phonological status of ng , especially in relation to syllable boundaries, remains an important direction for future research.

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