

# Consonantalized Nasal and Lateral Vowel /ə/ Versus Nasal and Lateral Syllabic Consonants

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## Abstract

The present paper aims, firstly, to investigate the phonological change that takes place to the unstressed vowel in the closed syllable CVC without onset + /ə/ + (lateral/nasal consonant). In this regard, I will explain the distinctive feature of /ə/, /l/ and /n/ as actual phonemes, and describe their distinctive feature in phonological patterns expressed by the syllable structure rule CVC, regardless of onset. In other words, the research focus will be on the rhyme of the CVC, where V stands for /ə/ and C stands either for /l/ or /n/. Secondly, I will demonstrate the cause of the phonological change that occurs in the rhyme of the syllable. Thirdly, I intend to establish which phoneme has power over the other phoneme in the rhyme of syllable CVC (/ə/+l/or /n/). Fourthly, I will construct a proper definition for the rhyme of the syllable involving the phonological change occurring to the unstressed vowel in this rhyme. The most important results are: firstly, /ə/ is assimilated (consonantalized) by lateral and nasalized features within the rhyme context (-/ə/ +/n/ or -/ə/+l/), secondly, there is no evidence for the elision of /ə/ in the same phonological context. The term consonantalization is proposed as a result of similarities between /ə/, /n/ and /l/ and /l/ in the rhyme of syllable CVC (/ə/+l/or /n/).

**Keywords:** Consonantalized Vowel Sound, Consonantalization, Syllabic Consonant, Phonological Change

## 1. Introduction

Syllabic consonant is considered one among the weak or unstressed form. This study confirms this fact because it contains the short and weak vowel /ə/, but almost the scientific papers that have addressed this phonological phenomenon confirming that the weak vowel /ə/ is omitted because of its weakness and the strength of following the sonorant consonants /m/, /l/, /n/ /r/ or /s/ in the final syllable of a word. This kind of sound change (dropped) is described as elision. The significant of this study will conclude another kind of phonological change occurs in such phonological environment. The results of this study may motivate researchers to conduct many papers to scientifically confirm or to reject these results using many acoustic phonetic devices.

A syllable is the basic phonological environment in which the whole phonological changes occur. Most of definitions of the syllable focus on defining the structure of the syllable, neglecting to define it in terms of phonological changes. Skandera and Burleigh (2005) defined a syllable as the smallest rhythmic unit of spoken language. Relatively, Crystal D. (1985) claims that a syllable is an element of spoken language that works as a unit of rhythm, that is intelligible in English pronunciation and is a combination of a vowel and a syllabic consonant, or a vowel plus consonant combination.

The syllable in English occurs in different patterns: a vowel and an open or closed syllable, regardless of the number of consonant sounds on onset or coda. A syllable may be defined by the term of onset, coda or the nucleus of the syllable (vowel sound). A syllable with onset + vowel sound, without a coda, is called an open syllable. A syllable with no onset, but with a nucleus and coda, is defined as a closed syllable. It is described in terms of the weakness or the strength of the vowel it contains. In terms of the vowel length, a syllable is described as short or long, relatively. Smith (1982) defines a syllable in the terms “heavy” and “long” when describing a strong syllable and the terms “light” and “short” when describing a weak syllable.

When the closed syllable contains an onset + a vowel sound and coda, the nucleus and coda are called the rhyme. A nucleus is a theoretical term, but practically, is represented by different kinds of vowel sounds (simple, diphthongs or triphthongs) with different qualities (length, loudness, tenseness). A nucleus of a syllable with a weak quality is influenced by the successive consonant sound, especially the lateral sound /l/ and the nasal sound /n/.

## 2. Review of Literature

The phonological changes that occur inside syllables are caused by the different structures of the syllables. These phonological changes vary according to the quality of the nucleus of the syllable and of the consonant sounds (coda). In other words, the phonological changes occurring inside the syllable depend on the quality of the nucleus and the kind of consonant that follows it. If the nucleus of a syllable is short and a weak, then the successive consonant has the power to change the existence of a short vowel to nothing. These phonological changes have been described by phoneticians such as Hock. H. Henrich (1990), who claims that sound changes take place mechanically and involve pronunciation conditioned by purely phonetic factors. The phonetic factors that change the rhyme of the syllable are the distinctive features of the core and coda of the syllable. These distinctive features express the sound quality in the rhyme of the syllable.

The rhyme of a syllable can be exposed to great phonological changes. These changes are due to the weakness of the nucleus and the strength of consonant sounds located in the coda. When this phonological change occurs, the consonants are described as syllabic consonants (/l/, /m/, /n/, /r/ and /s/). Most linguists describe this change as elision of the short vowel under the influence of the ensuing sonorant consonant sounds. In generative phonology, elision was considered a phonological process that influenced the original syllabic structure of words. Roach. R (2015) states that the sound is elided under specific circumstances: when a phoneme may be articulated as zero, have zero realisation, or be deleted. As with assimilation, elision is typical of rapid, casual speech. Hartmann & Stork (1972) assert that elision is a loss of phonemes that happens across syllable or word boundaries. According to Schane (1973), elision is a phonological process that takes place inside the syllabic structure of words, and the differences among syllabic structure stimulate phonemes to be dropped in certain contexts by the speakers. In this aspect, Bell & Hirose, H (1978) confirms that syllabic consonants and syllabic obstruent often appear as a result of vowel elision processes; the elision of an unstressed vowel in a syllable CVC gives the whole syllable the aspects of the consonant clusters characteristic, leading to the component of the syllable to more complex structure. Roach, P (2012) asserts that a consonant, either l, r or a nasal, stands as the peak of the syllable instead of the vowel syllables in which no vowel is found. It is clear that a syllable must be defined in terms of the vowel quality; a syllable is the basic phonological environment in which the whole phonological changes occur.

## 3. Phonological Descriptions

To investigate the nature of the exact phonological change in the rhyme of the syllable CVC (/ə+/l/or /n/), it is essential to explain the distinctive features of /ə+/l/ and /n/. /ə/, as described by A.C. Gimson (1989).

In describing the production of the sounds /n/, /l/, and /ə/, we must consider and observe the movement of different parts of the tongue. During the production of the sound /n/, the tongue achieves closure to the alveolar ridge; the soft palate lowers the air stream escaping through the nasal cavity, imparting a resonance to the nasal cavity. One can observe that the back of the tongue touches the soft palate and the center is raised to a position between mid-open and mid-close.

In the articulation of the lateral sound /l/, the back of the tongue is raised, closing the nasal cavity. The tip of the tongue comes in contact with the alveolar ridge to give air a passage through which to escape (between the two sides of the tongue rims and the upper side teeth). The center of the tongue is raised to a position between half-close and half-open.

The sound /ə/ is articulated between the half-close and half-open positions by raising the central part of the tongue against the soft palate. The tongue is in the lax mood. The quality of the /ə/ sound is an unaccented vowel sound. The following table presents the different distinctive features of the English sounds /n/, /l/ and /ə/:

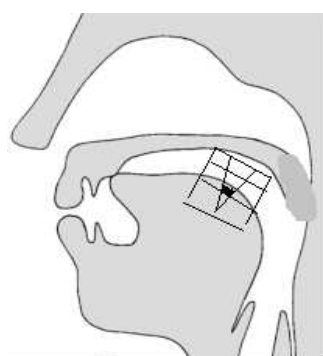
**Table 1: the different distinctive features of the English sounds /n/, /l/ and /ə/**

The distinctive features	Voicing		Place articulation		Nasalization		Manner of articulation			Movement of the tongue		
	Voiced	Voiceless	Alveolar	Central	Oral	Nasal	Nasal	Lateral	Vocalic	Front	Center	Back
/n/	*		*			*	*			*		
/l/	*		*		*			*		*		
/ə/				*	*				*		*	

The above table presents the distinctive features of the English phonemes /n/, /l/ and /ə/ as actual isolated phonemes. It seems there are similarities between /n/ and /l/. Both sounds /n/ and /l/ are alveolar and voiced, but /n/ is nasal and /l/ is an oral sound. The vowel phoneme /ə/ is a voiced, oral, central, and weak vowel. All these distinctive features among all these phonemes are changeable, when they make up a syllable in the pattern CVC. V represents /ə/ and C stands either for /n/ or /l/, making two different syllables. In the flow of speech, a phoneme influences or is influenced by the neighboring sound. This influence results in a phoneme either losing its distinctive features or acquiring the features of the preceding and succeeding sound.

**4. Phonological Analysis**

I will investigate the phonological changes that take place in the syllable pattern *c /ə/+n/* or *c /ə/+l/*. The focus will be on the distinctive features that are acquired or lost by the nucleus of the syllable /ə/ within the following examples: *action / ə ʃən/* and *hospital /hɒs pi təl/*. To show what phonological features are acquired or lost by /ə/, it is necessary to describe the articulation of the rhyme of the syllable (nucleus and coda). In the first example (*action / ə ʃən/*), for the articulation of the rhyme /ən/, the soft palate is raised for the production of /ə/ and the center of the tongue moves against the soft palate between half-open and half-close; then, the air is blocked by a closure which is made by the tip of the tongue and the alveolar ridge (during the production of /n/); then the soft palate is lowered, shutting the oral cavity, and air escapes out through the nasal cavity. The center of the tongue is between half -open and half-closed position during production of the sound /n/. During the production of the rhyme /- ən/, the vowel sound /ə/ loses the vowel feature because air does not escape freely, due to the block formed by the tip of the tongue and alveolar ridge; it then acquires consonantal feature of /n/. Air does not escape through the oral cavity during the articulation of /ə/ because the soft palate lowered for the articulation of the succeeding consonant sound /n/, and the escaping air stream through the nose gives the sound /ə/ the nasalized features; therefore, /ə/ is characterized by the nasal features because of the nasalized context.

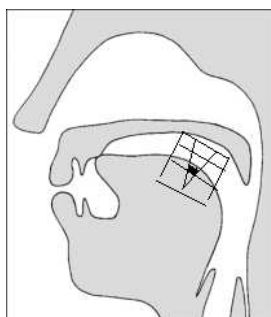


**Figure 1-1**

Figure 1-1 shows how the distinctive vowel feature (central) is characterized by /l/ and /ə/, and how /ə/ is characterized by the consonantal feature (alveolar).

For the production of the rhyme /əl/ in *hospital (/hɒs pi təl/)*, the soft palate is raised and the center of the tongue moves against the soft palate between half-open and half-close position. The shape of the two lips is neutral, air encounters an obstacle made by the tip of the tongue and alveolar ridge (during the production of /l/), and then the air escapes through a hole made by lowering the rims of the tongue from the upper molars. The center of the tongue is between half-open and half-close position while articulating the sound /l/.

During the articulation of /ə/ rhyme, /ə/ loses the vowel features, because the air stream encounters an obstacle made by the tip of the tongue and the alveolar ridge during the production of the sound /l/, after which /ə/ acquires the consonantal lateral feature of the sound /l/ (alveolar). During the production of /əl/, the center of the tongue is between the half-close and half-open; this feature is shared by /ə/ and /l/. /ə/ and /l/ are voiced and oral sounds.



**Figure 1-2**

Figure 1-2 shows how the distinctive vowel feature (central) is characterized by /n/ and /ə/, and how /ə/ is characterized by the consonantal feature (alveolar- nasal sound).

The description of the production of /ən/ and /ənl/ shows how the nasal /n/ and the lateral sounds interact with the short vowel sound /ə/ in the rhyme contexts /ən/ and /ənl/. This phonological interaction motivates /ə/ to lose some of its phonological distinctive features (oral feature) and acquire either nasal feature or alveolar features within the rhyme /ən/. /ə/ acquires the lateral/alveolar features within /əl/ rhyme while it loses the vowel feature (a vowel is produced without any obstacle). The /ə/ is central half open and the center of the tongue is raised against the soft palate during the articulation of the whole rhymes /ən/ and /ənl/. This feature is shared among /ə/ and /n/ and /l/; either they produced in isolation or with the rhyme /ən/ or /ənl/.

## 5. Data Discussions

Clearly, many distinctive phonological features are characterized by /ə/, /n/ and /l/ within the rhyme either /ən/ or /əl/. These distinctive features provide /ə/, /n/ and /l/ with degrees of similarities. In light of these similarities, the phonological change is described as assimilation; in other words, the degree of similarity between /ə/, /n/, /l/ in the rhyme (/ən/ and /əl/) causes /ə/ to be assimilated by /l/ and /n/. This view is confirmed by Hamada and Ahmad (2025), who asserted that assimilation usually takes place when two sounds share common phonological features (place or manner of articulation). The same conclusion stands in opposition to Roach, P. (2015), Schane (1973), Bell (1978) and Hartmann & Stork (1972), who state that phonological change in the rhyme of the syllable with the nucleus /ə/ is a kind of elision of the sound /ə/; the consonant sound /n/ or /l/ becomes the nucleus of the syllable instead. This study shows no evidence of elision to /ə/ and /ə/ is not replaced by /l/ or /n/ in the rhyme of syllable CVC (/ə+/l/or /ə+/n/), therefore, the term "Syllabic Consonant, is replaced by "Consonalized Vowel, /ə/ and this phonological change is proposed as Consonantalization that is defined as a phonological changes occurs to /ə/ in the rhyme of syllable CVC (/ə+/l/or /ə+/n/) where the unstressed vowel /ə/ acquires the distinctive features of the sound /l/ and /l/.

## 6. Conclusion

This paper shows that a syllable is defined as the basic phonological environment in which the whole phonological changes occur. Assimilation is the phonological modification to the unstressed vowel in the close rhyme CVC /ə/ + (lateral/nasal consonant). /ə/ is assimilated (consonantalized) by lateral and nasalized features within the rhyme context (-/ə/ +/n/ or -/ə/+/l/) and there is no evidence for the elision of /ə/. The term consonantalization is a new phonological tem that shows the "assimilation" phonological change as a result of the similarities between the distinctive feature of unstressed vowel /ə/, /l/ and /n/, therefore, the term consonantalized /ə/ comes in opposition to the term syllabic consonant. Consonantalization is defined as a phonological change occurs to /ə/ where, /ə/ acquires the distinctive features of the sound /l/ and /l/.

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