

## ARTICULATORY AND ACOUSTIC FEATURES OF UNSTRESSED VOCALISM IN THE ENGLISH LANGUAGE

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### Abstract

The article “Articulatory and Acoustic Features of Unstressed Vocalism in the English Language” provides a comprehensive analysis of vowel reduction and the functioning of unstressed vowels in English phonetics. The study emphasizes the central role of the neutral vowel /ə/ (schwa) as the core element of unstressed vocalism, describing its positional variants and articulatory features as outlined by D. Jones and later phoneticians. It also highlights the occurrence of other unstressed vowels such as /ɪ/ and /ʊ/, explaining their distributional patterns and dependence on stress and position within the word. Drawing on works by D. Jones, G. P. Torsuev, G. Kelly, P. Roach, G. Knowles, and others, the article categorizes vowels in unstressed syllables into three types – full, semi-weak, and reduced – and clarifies their usage in different speech styles (careful, rapid, and literary). Particular attention is paid to semi-weak vowels that represent an intermediate stage between full and fully reduced forms. The study concludes that while /ə/ dominates in unstressed positions, its articulation varies according to word structure and syllabic position, resulting in a continuum of vowel weakening. Overall, the article presents a detailed theoretical overview of English unstressed vocalism, synthesizing classical and modern phonetic research to illustrate the dynamic nature of vowel reduction in English pronunciation.

**Keywords:** Schwa (/ə/), reduction, unstressed vowel, semi-weak vowel, full vowel, positional variants, phoneme (/ɪ/), articulation.

### Introduction

The study of unstressed vocalism occupies an important place in English phonetics, as it reveals how vowels change their quality and quantity depending on stress. In the English language, unstressed vowels demonstrate a wide range of reduction processes that reflect the dynamic nature of spoken speech. The neutral vowel /ə/, known as the *schwa*, is the most frequent and central element of unstressed vocalism, occurring in numerous grammatical and lexical contexts. Understanding its articulation, distribution, and relation to other vowels such as /ɪ/ and /ʊ/ helps to explain the rhythm and pronunciation patterns of English. This article examines the main phonetic features of unstressed vowels, their positional variants, and the stages of vowel reduction based on the works of both classical and modern phoneticians.

### METHODOLOGY

The research is based on a **descriptive and comparative phonetic analysis** of unstressed vowels in the English language. The study draws on both **theoretical sources** and **practical phonetic**



**data.** Descriptions and classifications of unstressed vocalism were analyzed according to the approaches of **D.Jones, A.C.Gimson, P.Roach, and G.P.Torsuev**, whose works provide the foundation for modern English phonetics.

The research process included several stages:

1. **Collection of data** from English phonetic literature and dictionaries to identify the main types of unstressed vowels and their articulatory features.
  2. **Comparison of vowel realizations** in different phonetic environments, focusing on their quality, quantity, and degree of reduction.
  3. **Observation of pronunciation patterns** in careful, rapid, and colloquial speech styles to determine the positional variants of unstressed vowels.
  4. **Systematization of findings** into categories of *full*, *semi-weak*, and *reduced* vowels.
- This mixed qualitative method allowed for both the **theoretical generalization** of phonetic concepts and the **practical analysis** of how unstressed vowels function in natural English pronunciation.

## RESULTS AND DISCUSSION

The significance of scientifically studying the concepts of **speech sound, phoneme, and the variants and variations of a phoneme in different positions** through the example of a particular language lies in the fact that such research provides a foundation for examining the still unexplored aspects of speech sounds in other languages. As a result, along with revealing the **phonetic** [9, 10, 11, 12, 13] and **phonological** [14, 15, 16, 17, 18] features of the smallest units related to speech and language in languages of different systems, their language-specific and common characteristics from both phonetic and phonological perspectives also become clearer [19, 20]. From this point of view, an in-depth investigation of units such as **speech sounds** and the **phoneme** through the example of a particular language gains crucial importance.

The basis of the unstressed vocalism system in English is formed by the neutral vowel /ə/. As a result of the reduction process, vowels in unstressed syllables lose their qualitative and quantitative characteristics, leading to the emergence of the neutral vowel /ə/. Although it is characterized by an indistinct quality and is pronounced shortly and weakly, it still has several positional variants that differ according to its place in the word. D. Jones distinguishes three positional varieties of the neutral vowel /ə/ depending on the position of the tongue (1, p. 89). He conditionally designates them as /ə<sub>1</sub>, ə<sub>2</sub>, ə<sub>3</sub>/, and since /ə<sub>1</sub>/ can be pronounced instead of /ə<sub>2</sub>/, he believes that in the practical study of English it is important to differentiate mainly two variants of the vowel /ə/ – /ə<sub>1</sub>/ and /ə<sub>3</sub>/.

According to Jones, /ə<sub>1</sub>/ belongs to the mixed row of vowels and resembles the quality of /ɜ:/, but is much shorter, making it difficult to perceive. He notes that /ə<sub>1</sub>/ usually occurs in initial or medial syllables, for example:

*along* /ə' lɒŋ/, *admit* /əd' mɪt/, *malady* /' mælədi/, *salad* /' sæləd/.

Jones further states that /ə<sub>2</sub>/ is formed with the tongue raised slightly higher and retracted farther back than in /ə<sub>1</sub>/, and usually occurs at the beginning or middle of a word next to the consonants



/k/ or /g/: *condemn* /kən'dem/, *to go* /tə'gəʊ/, *hypocrite* /'hɪpəkraɪt/, *suffocate* /'sʌfəkeɪt/. He observes that since the pronunciation of /əɪ/ and /əʊ/ is close, one can be substituted for the other: *hammock* /'hæməɪk/, *Jacob* /'dʒeɪkəɪb/; *breakfast* /'breɪkfəst/, *pavement* /'peɪvmənt/.

The variant /ə/ is pronounced even shorter than /əɪ/ and resembles /ʌ/; it usually occurs in word-final position: *china* /'tʃaɪnə/, *villa* /'vɪlə/, *collar* /'kɒlə/. According to Jones, this unstressed vowel /ə/ is pronounced in this form only when followed by a pause. Otherwise, if no pause follows, /əɪ/ is used instead: *china tea* /'tʃaɪnə'ti:/, *over there* /'əʊvəðeə/.

G.P.Torsuev states that when the neutral vowel /ə/ occurs before the morphemes /z/ (plural noun marker or 3rd person singular present tense verb ending) and /d/ (past participle or past tense marker), it represents a fourth variant of the neutral vowel (2, pp. 103–104). He conditionally identifies four types of neutral /ə/ as /əʌ/, /əz:/, /əe/, and /ə/. In addition, the neutral vowel /ə/ sometimes resembles the quality of /ɪ/, especially in adjectives with the suffix *-ible*: *accessible* /ək'sesəbl/, *imperceptible* /ɪmpə'septəbl/, *admissible* /əd'mɪsəbl/, *incombustible* /ɪnkəm'bʌstəbl/, *implausible* /ɪm'pləʊzəbl/. Due to reduction, the degree of weakness in the pronunciation of /ə/ varies in each of these cases.

Gerald Kelly notes that the vowel /ə/, called *schwa* (a term borrowed from Hebrew), is not the only vowel found in unstressed syllables, but is by far the most frequent one in English. He gives the following examples to show that *schwa* /ə/ can occur in the first, second, or third syllable of a word: *about* /ə'baʊt/, *paper* /'peɪpə(r)/, *intricate* /'ɪntrɪkət/. Kelly emphasizes that /ə/ is always unstressed, and if stress is placed on it, its nature changes and another phoneme is produced (3, pp. 32, 67–68).

In addition to /ə/, the unstressed vowel /ɪ/ also occurs in unstressed syllables. This vowel is an allophone of the phoneme /ɪ/ in unstressed positions, usually appearing in the middle or at the end of a word, as well as in prefixes and suffixes: *mischievous* /'mɪʃɪf/, *abdicate* /'æbdɪkeɪt/, *infinite* /'ɪnfɪnɪt/, *darkness* /'dɑ:kni:s/ (4, p. 121).

Gerald Knowles also points out that the quality of unstressed vowels /ə/ and /ɪ/ differs depending on their position in the word (5, pp. 101–102). He notes that the “schwa” /ə/ is usually of indeterminate quality, but in final position it tends to resemble the quality of /ʌ/. According to him, the quality of word-final “schwa” /ə/ and unstressed /ɪ/ may vary depending on the dialect: *butter* /'bʌtə/ (RP) – /'bʌte/ (Liverpool), *city* /'sɪti/ (RP) – /'sɪtɪ:/ (other dialects).

Peter Roach observes that, though rare, unstressed vowels may also be represented by /u/, besides the typical /ə/ and /ɪ/: *better* /'betə/, *happy* /'hæpi/, *thank you* /'θæŋk ju/. He stresses that although /ə/ does not occur in every unstressed syllable, it appears in most of them, and it is essential to know when it is and isn't used. Roach provides examples of letters and letter combinations pronounced as /ə/ in unstressed positions compared with their stressed variants:

Letters	Stressed	Unstressed	Example
a	/æ/	/ə/	<i>attend</i> /ə'tend/
ar	/ɑ:/	/ə/	<i>particular</i> /pə'tɪkjələ/
ate	/eɪ/	/ə/	<i>intimate</i> /'ɪntɪmət/
o	/ɔ, əʊ/	/ə/	<i>tomorrow</i> /tə'mɒrəʊ/
or	/ɔ:/	/ə/	<i>forget</i> /fə'get/
e	/e/	/ə/	<i>settlement</i> /'setlmənt/
er	/ɜ:/	/ə/	<i>perhaps</i> /pə'hæps/
u	/ʌ/	/ə/	<i>support</i> /sə'pɔ:t/
ough	varied	/ə/	<i>thorough</i> /'θɒrə/
ou	/aʊ/	/ə/	<i>gracious</i> /'ɡreɪʃəs/



Roach also explains that unstressed /ɪ/ occurs in words ending in “y” or “ey” (*happy, valley*); in prefixes *re-*, *pre-*, *de-* and in suffixes *-iate*, *-ious* (*react, preoccupied, deactivate, appreciate, hilarious*); and in unstressed function words such as *he, she, we, me, be*. It may occur in initial, medial, or final unstressed syllables, generally as an unstressed realization of the vowels *i* and *e*: *resist* /rɪ'zɪst/, *incident* /'ɪnsɪdənt/, *liquid* /'lɪkwɪd/. Roach further notes that the back rounded vowel /u/ also occasionally occurs in unstressed positions, as in *you, to, into, do, through, who*. According to Ch. Barber, the use of the “schwa” /ə/ in unstressed syllables is becoming increasingly common (7, pp. 48–49). He demonstrates that /ə/ can substitute for the vowels /e, æ, ɔ, ʌ, ɪ/ and the diphthong /eɪ/ in unstressed positions without changing meaning: *September* /sep'tembə(r)/ – /səp'tembə/, *handicapped* /'hændɪkæpt/ – /'hændɪkəpt/, *boycotted* /'bɔɪkɒtɪd/ – /'bɔɪkətɪd/, *sawdust* /'sɔ:dʌst/ – /'sɔ:dəst/, *candidate* /'kændɪdeɪt/ – /'kændɪdət/.

As a result of partial reduction, besides /ə/ and /ɪ/, semi-weak vowels may also occur in unstressed syllables. V.A. Vassilyev, citing I. Ward, defines semi-weak vowels as those lying between the full and neutral realizations of a vowel. For example, the nucleus /o/ of the diphthong /əʊ/ may function as a semi-weak vowel. It is used in careful speech in place of /ə/ (*obey* /o'beɪ – ə'beɪ/, *November* /no'vembə – nə'vembə/, *to protest* /pro'test – prə'test/), or in full speech in place of the diphthong /əʊ/ (*obey* /o'beɪ – oʊ'beɪ/, *November* /no'vembə – noʊ'vembə/, *to protest* /pro'test – prou'test/) (8, pp. 215–216).

G.P. Torsuev states that semi-weak vowels result from partial reduction and may involve /e/, /æ/, /a:/, /ɔ/, /ɔ:/, /ɜ:/ and the diphthong /əʊ/. In transcription, semi-reduced vowels may be indicated with a small /ə/ mark above them: *partition* /pa:˞'tɪʃn/, *collect* /kɔ˞'lekt/, *abstract* /æ˞b'strækt/, *November* /no˞'vembə/ (2, p. 108). Semi-weak vowels partly retain their original quality and thus are not independent phonemes; they do not serve to distinguish meaning.

Vowels in unstressed syllables may also retain their full quality instead of being reduced. This occurs especially in loanwords from Latin or Greek, such as *architect* /'ɑ:kɪtekt/, *archaic* /ɑ:'keɪk/. In such cases, the vowels /i:, ɪ, e, æ, a:, ɔ, ɔ:, u, ʊ, ʌ, ɜ:/ maintain the same quality as in stressed syllables and are pronounced in the *full style*; replacing them with /ə/ or semi-weak vowels would be incorrect.

## CONCLUSION

In unstressed syllables, vowels may occur in three forms: full, semi-weak, or reduced (as /ə/ or /ɪ/). The neutral vowel /ə/ is characteristic of rapid colloquial speech; semi-weak vowels occur in careful pronunciation, while vowels retaining their full quality are found in the full style of speech. In transcription, rapid-speech unstressed vowels are represented by /ə/, and in full style by their unreduced quality.

In literary pronunciation, unstressed vowels may appear both as /ə/ and as full-quality vowels. When pronounced as a weak vowel, /ə/ is very short and indistinct; when semi-weak, it partially preserves its quality (e.g. /ə'beɪ – o'beɪ/). Vowels of full formation retain their complete quality. The distinction between semi-weak and full vowels is sometimes subtle, particularly for /a:/: *partition* /pa:'tɪʃn/ (semi-weak) versus *articulate* /ɑ:'tɪkjuleɪt/ (full-quality unstressed vowel).

Thus, although unstressed vowels in English may appear as weak, semi-weak, or full, the neutral vowel /ə/ remains the core of the system. However, it lacks a fixed articulation and displays several positional variants – /ə^/, /ə^3/, /ə^e/, /ə^l/, and /ə/. The clarity of its pronunciation depends



on word structure: in shorter words /ə/ is more distinct, while in longer words its quality weakens in later syllables. For instance, in *demonstrator* /'demənstreitə(r)/, /ə/ appears twice – in the second and fourth unstressed syllables; in *inconsiderate* /ɪŋkən'sɪdəreɪt/, it occurs three times – in the second, fourth, and fifth unstressed syllables, with earlier instances being more distinct than later ones. Therefore, the more syllables a word contains, the weaker and more indistinct its unstressed vowels become.

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