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VOCALISM AND THE PHENOMENON OF “O” LENGTHENING IN LINGUISTICS

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Abstract: This study explores the phenomenon of “O” lengthening within the framework of vocalism in linguistics. It examines the articulatory, phonological, morphological, prosodic, and sociolinguistic factors that influence vowel duration. The paper highlights historical developments, cross-linguistic patterns, and the functional role of /o/ lengthening in lexical, grammatical, and stylistic contexts. Using evidence from Indo-European and non-Indo-European languages, the study demonstrates how vowel length contributes to phonemic contrast, morphological marking, and prosodic organization, emphasizing its cognitive and communicative significance.

Keywords: Vocalism, vowel lengthening, /o/ vowel, phonology, morphology, prosody, historical linguistics, sociolinguistics

ГЛАСНАЯ СИСТЕМА И ФЕНОМЕН УДЛИНЕНИЯ ЗВУКА «О» В ЛИНГВИСТИКЕ

Аннотация: Данное исследование посвящено феномену удлинения звука «О» в рамках гласной системы в лингвистике. Рассматриваются артикуляторные, фонологические, морфологические, просодические и социолингвистические факторы, влияющие на длительность гласного. В работе освещаются исторические изменения, типологические закономерности и функциональная роль удлинения /o/ в лексическом, грамматическом и стилистическом контексте. На основе данных индоевропейских и неиндоевропейских языков показано, как длительность гласного влияет на фонемное различие, морфологическое кодирование и просодическую организацию, подчеркивая когнитивное и коммуникативное значение данного явления.

Ключевые слова: Гласная система, удлинение гласного, гласный /o/, фонология, морфология, просодия, историческая лингвистика, социолингвистика

The study of vocalism constitutes one of the central concerns in the field of phonology and historical linguistics. Vocalism refers to the system and behavior of vowels within a given language, encompassing their articulation, distribution, and phonemic distinctions. Among the various phonological processes, the phenomenon of “O” lengthening holds particular significance due to its implications for historical sound changes, morphological alternations, and phonetic evolution. “O” lengthening, sometimes referred to as *long O* or *O prolongation*, involves the systematic increase in the duration of the vowel /o/ in specific phonetic, morphological, or prosodic environments. This phenomenon is attested across multiple languages, including Indo-European languages,



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and has been a subject of scholarly inquiry in terms of both synchronic and diachronic linguistics.

Vocalism, as a framework, analyzes the role of vowels in the structure of language. It explores the interplay between vowel quality, length, stress patterns, and syllabic structure. The phenomenon of “O” lengthening is particularly illustrative of the dynamic nature of vocalic systems. Historically, “O” lengthening can result from various phonetic and morphological conditions. For instance, in Classical Latin, stressed vowels preceding certain consonantal clusters were lengthened, leading to alternations in both morphological forms and metric structures in poetry¹. Similarly, in Old English, the lengthening of /o/ in open syllables played a crucial role in vowel shifts, which eventually contributed to the Great Vowel Shift in Middle English.

Phonetic studies indicate that “O” lengthening is not merely a quantitative increase in duration but may also involve subtle changes in vowel quality. Acoustic analysis shows that lengthened /o:/ vowels often display higher formant frequency stability and a more centralized tongue position compared to their short counterparts, which can influence perceptual distinctiveness and phonological categorization. In many languages, “O” lengthening is conditioned by syllable structure, stress assignment, and morphological boundaries. For example, in Italian, the lengthening of /o/ occurs in open stressed syllables, while closed syllables resist such prolongation, illustrating the interaction between prosodic hierarchy and vowel quantity². From a diachronic perspective, “O” lengthening is frequently associated with compensatory mechanisms. When consonantal loss or reduction occurs, vowels often lengthen to preserve syllabic weight and rhythmic balance. In French, historical /o/ lengthening can be traced to the loss of final consonants in stressed syllables during the transition from Latin to Old French, with measurable impacts on both prosody and morphology³. Additionally, comparative studies in Slavic languages show that “O” lengthening correlates with morphological paradigms, suggesting that vowel duration may serve as a marker of grammatical features, such as tense, number, or aspect.

Theoretical frameworks in phonology provide tools to model “O” lengthening systematically. Generative phonology, for instance, accounts for lengthening as a rule-governed process conditioned by stress and syllable structure, while Optimality Theory considers lengthening as the result of ranked constraints prioritizing syllable weight and prosodic prominence⁴. Recent experimental studies using acoustic phonetics and speech synthesis have further elucidated the temporal and spectral properties of lengthened /o/ vowels, highlighting the interplay between cognitive perception and articulatory execution.

In addition to historical and theoretical considerations, the sociolinguistic dimension of “O” lengthening is also notable. Variations in vowel length may signal regional dialectal differences, sociolectal distinctions, and even stylistic or poetic preferences. In

¹ Allen, W. S. *Vox Latina: A Guide to the Pronunciation of Classical Latin*. Cambridge: Cambridge University Press, 1978.

² Maiden, M., & Robustelli, C. *A Reference Grammar of Modern Italian*. London: Routledge, 2011.

³ Posner, R. *The Romance Languages*. Cambridge: Cambridge University Press, 1996.

⁴ Halle, M., & Mohanan, K. P. “Segmental Phonology of Modern English.” *Linguistic Inquiry*, 12(1), 1981, pp. 23–52.



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contemporary English, for example, certain regional accents display systematic lengthening of /o/ in words such as *go* or *know*, which is phonetically conditioned by preceding consonants and stress patterns. Moreover, in literary and poetic contexts, vowel lengthening often contributes to meter, rhyme, and phonesthetic effects, reinforcing the functional role of vocalism in communication beyond mere phonetic realization⁵. The study of “O” lengthening, therefore, requires a multidisciplinary approach, integrating historical linguistics, phonetics, phonology, morphology, and sociolinguistics. Empirical research combining acoustic measurement, historical reconstruction, and cross-linguistic comparison has significantly advanced our understanding of how vowels evolve and how their temporal characteristics impact language structure and use.¹³ Furthermore, the cognitive and perceptual dimensions of lengthening continue to be explored in psycholinguistics, revealing the extent to which vowel duration affects lexical access, speech processing, and phonological awareness.

The mechanisms underlying the phenomenon of “O” lengthening are multifaceted, encompassing articulatory, phonological, and prosodic factors. Articulatorily, vowel lengthening involves prolongation of the vocal fold vibration during the production of the vowel, resulting in measurable temporal extension. Phonologically, lengthened vowels often serve as distinctive units within the vowel system of a language, marking contrasts in meaning or grammatical function. In many historical cases, the lengthening of /o/ is conditioned by specific phonotactic environments, such as the presence of a following voiced consonant, an open syllable, or stress position⁶.

One notable pattern is the distinction between open-syllable and closed-syllable lengthening. In languages such as Old English and certain Germanic dialects, vowels in open syllables frequently underwent systematic lengthening, whereas those in closed syllables remained short. This pattern is significant not only for phonological analysis but also for understanding the evolution of morphological alternations, including noun and verb inflection⁷. For instance, the alternation between *fo*t [foot] and *fō*t [feet] illustrates how vowel lengthening and quality change intersect with grammatical marking. Cross-linguistic studies reveal that “O” lengthening is neither uniform nor random but follows language-specific constraints. In Romance languages, lengthening often arises from compensatory processes following consonantal elision. In Italian, the loss of medial /-i-/ or /-u-/ in certain verb forms triggers vowel lengthening in the preceding syllable, affecting both the temporal and spectral properties of /o/. In French, historical lenition of final consonants led to the lengthening of /o/ in stressed syllables, contributing to the development of modern pronunciation patterns distinct from Latin.

Beyond European languages, vowel lengthening, including /o/, is attested in non-Indo-European systems. In Japanese, vowel length serves a phonemic function, with long /o:/ contrasting with short /o/ in minimal pairs, such as *koko* [here] versus *kōkō* [high

⁵ Crystal, D. *The Cambridge Encyclopedia of the English Language*. Cambridge: Cambridge University Press, 2003.

⁶ Trask, R. L. *A Dictionary of Phonetics and Phonology*. London: Routledge, 1996.

⁷ Campbell, A. *Old English Grammar*. Oxford: Oxford University Press, 1959.



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school]⁸. This illustrates that lengthening is not merely a historical or morphophonemic artifact but also a central feature of contemporary vowel systems in multiple language families. Furthermore, acoustic studies indicate that lengthened /o:/ vowels exhibit increased intensity and slightly altered formant structure, which enhances perceptual salience and aids lexical differentiation. The interplay between stress and vowel length is another critical factor. Languages that employ a stress-timed rhythm often exhibit systematic vowel lengthening in stressed positions, including the vowel /o/. In English, for example, stressed syllables in words like *go* or *over* feature lengthened /oo/ compared to unstressed counterparts, demonstrating the interaction between prosodic hierarchy and segmental duration⁹. Stress-related lengthening not only affects temporal patterns but can also trigger secondary articulatory adjustments, such as lip rounding or tongue height modulation, which further differentiate long from short vowels.

Morphologically conditioned lengthening also provides insights into the functional role of vowels in grammatical systems. In Slavic languages, for instance, vowel length may signal case distinctions or aspectual contrasts, with /o/ lengthened in specific morphological contexts. This functional aspect highlights the dual role of vowel lengthening as both a phonetic and grammatical phenomenon, integrating sound structure with semantic and syntactic encoding¹⁰. Additionally, computational modeling and Optimality Theory analyses have demonstrated that constraints favoring syllable weight and prosodic well-formedness predict the occurrence of /o/ lengthening with remarkable accuracy, reinforcing the systematic nature of this phenomenon across languages. Experimental phonetic research has further expanded our understanding of /o/ lengthening by combining articulatory imaging, acoustic measurement, and perceptual testing. Studies employing electromagnetic articulography and spectrographic analysis reveal that the temporal extension of /o:/ is accompanied by subtle adjustments in tongue posture and lip configuration, which enhance vowel clarity and distinguish it from short variants. Perceptual experiments indicate that listeners rely on both duration and spectral cues to identify lengthened vowels, confirming the cognitive salience of this feature in speech processing.

The social and stylistic dimensions of /o/ lengthening should not be overlooked. Dialectal variation in vowel duration often serves as a sociolinguistic marker, reflecting regional identity, socio-economic status, or stylistic preference. In poetic and literary contexts, deliberate lengthening of /o/ may create euphonic effects, reinforce meter, or enhance the emotive quality of language, demonstrating the aesthetic as well as functional significance of this phonological phenomenon¹¹.

In sum, the second part of this study highlights that “O” lengthening is governed by a complex interplay of articulatory, phonological, morphological, prosodic, and sociolinguistic factors. Its manifestations across languages underscore its systematic,

⁸ Vance, T. J. *The Sounds of Japanese*. Cambridge: Cambridge University Press, 2008.

⁹ Wells, J. C. *Accents of English*. Cambridge: Cambridge University Press, 1982.

¹⁰ Timberlake, A. *A Reference Grammar of Russian*. Cambridge: Cambridge University Press, 2004.

¹¹ Crystal, D. *The Cambridge Encyclopedia of the English Language*. Cambridge: Cambridge University Press, 2003.

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functional, and cognitively relevant nature, making it a central topic in both historical and contemporary phonology. Future research integrating acoustic, articulatory, and computational approaches promises to deepen our understanding of this enduring linguistic phenomenon.

Conclusion

The phenomenon of “O” lengthening represents a significant aspect of vocalism and phonological study, demonstrating how vowel duration interacts with articulatory, phonological, morphological, prosodic, and sociolinguistic factors. Across languages, the systematic lengthening of /o/ reflects historical sound changes, compensatory mechanisms, stress patterns, and morphological distinctions, emphasizing the functional and cognitive relevance of vowel quantity in communication.

Diachronic analysis shows that “O” lengthening often arises from phonetic environments, such as open syllables, stress placement, or consonantal loss, while synchronic studies reveal its role in lexical contrasts, grammatical marking, and dialectal variation. Acoustic and articulatory research further highlights the subtle interplay between duration, formant structure, and perceptual cues, illustrating how vowel length contributes to phonemic distinctiveness and intelligibility.

Moreover, sociolinguistic and stylistic considerations underscore the broader significance of /o/ lengthening, from marking regional or social identity to enhancing poetic and literary expression. Overall, the study of “O” lengthening provides crucial insights into the dynamics of vowel systems, illustrating the integration of sound patterns with cognitive, functional, and cultural dimensions of language. The multidisciplinary investigation of this phenomenon, combining historical linguistics, phonetics, phonology, and psycholinguistics, continues to enrich our understanding of human speech and language structure.

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