

## The Vowel Triangle of Turkish: An Alternative to the IPA Chart

*Göktuğ Börtlü  
Zeynep Doyuran*

Turkish vowels have been studied by a number of scholars in terms of the IPA quadrilateral; however, no consensus has been reached on the number and characteristics of Turkish vowel phonemes and allophones. Lindsey (2017) claims that the vowel space is wrongly depicted due to the vowel quadrilateral of the IPA. This is parallel to the argument of Wells (2009) that “the middle of the IPA chart represents an excessive enthusiasm for a non-Jonesian extension of the Cardinal Vowel scheme” and that some IPA symbols for vowels are the result of “a desire to label every intersection of lines on the chart, rounded and unrounded.” The IPA still promotes an acoustically unrealistic vowel chart which is conventionally formed as a quadrilateral. The Handbook of the IPA (1999) accepts that the vowel quadrilateral must be seen as an abstraction. Lindsey (2017) suggests a triangular vowel system shaped by the mean values of the first two formants of Wells’ and Jones’ vowels to present an alternative vowel chart to the IPA chart. In this study, Turkish vowel phonemes and their allophones were analyzed with the help of phonological rules and processes. As a result, a total of 12 allophones (i.e. [ɑ a e ε ɯ i o ɔ ø u ʉ y]) and 8 phonemes (i.e. /ɑ e ɯ i o ø u y/) surfaced. 96 vowel occurrences, 8 instances for each allophone, were articulated by 10 people (5 male, 5 female) who are standard Turkish speakers. This study also examines the Turkish vowel system by analyzing F1 and F2 of all its vowels on PRAAT. Specifically, as it is the major aim of this study, an alternative triangle vowel chart for Turkish is proposed rather than an abstraction suggested by the IPA.

**Keywords:** phonetics, phonology, vowel triangle, formant analysis, PRAAT, allophones, phonemes

## References

- Coşkun, V. (2008). Türkçenin ses bilgisi. İstanbul: IQ Kültür Sanat Yayıncılık.
- Demircan, Ö. (2009). Türkçenin ses dizimi. İstanbul: Der Yayınları.
- Ergenç, İ., & Bekâr Uzun, P. (2017). Türkçenin ses dizgesi. Ankara: Seçkin Yayıncılı.
- Erguvanlı-Taylan, E. (2015). The phonology and morphology of Turkish. İstanbul: Boğaziçi University Press.
- Handbook of the International Phonetic Association: A guide to the use of the International Phonetic Alphabet. (1999). Cambridge: Cambridge University Press.
- Hayes, B. (2009). Introductory phonology. Malden, MA: Wiley-Blackwell.
- Lindsey, G. (2017). Charting the vowel space. In G. Lindsey, & A. Nevins (Eds.), Sonic signatures (pp. 133-144). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Selen, N. (1979). Söyleyiş sesbilimi, akustik sesbilim ve Türkiye Türkçesi. Ankara: TDK Yayınları.
- Wells, J. (2009, June 3). John Wells's phonetic blog. Retrieved October 8, 2019, from <http://phonetic-blog.blogspot.com/2009/06/blog-post.html>