



# ARTICULATORY PHONETICS AND ENGLISH PRONUNCIATION



Rakkhun Panyawuthakrai.

*Articulatory Phonetics and English Pronunciation.*

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## INTRODUCTION TO ENGLISH PHONETICS

### 1.1 Introduction

Language used in speech is referred to as ‘**spoken language**’, while language presented in writing is called ‘**written language**’, which is tied to its writing system (**orthography**). Many languages of the world utilize both forms. There are 7,159 living spoken languages worldwide<sup>1</sup> (Ethnologue, 2025), and many of these are both spoken and written such as Thai, English, and Chinese. However, some spoken languages lack a ‘**writing system**’ like Eastern Lawua (Lua or Lawa), while others, such as Northern Thai (colloquially known as Khammuang), have a writing system but are not commonly written. This chapter focuses on the branches of phonetics and introduce the study of how English alphabet letters are read, spoken (or pronounced), spelled, and transcribed both phonetically and phonemically.

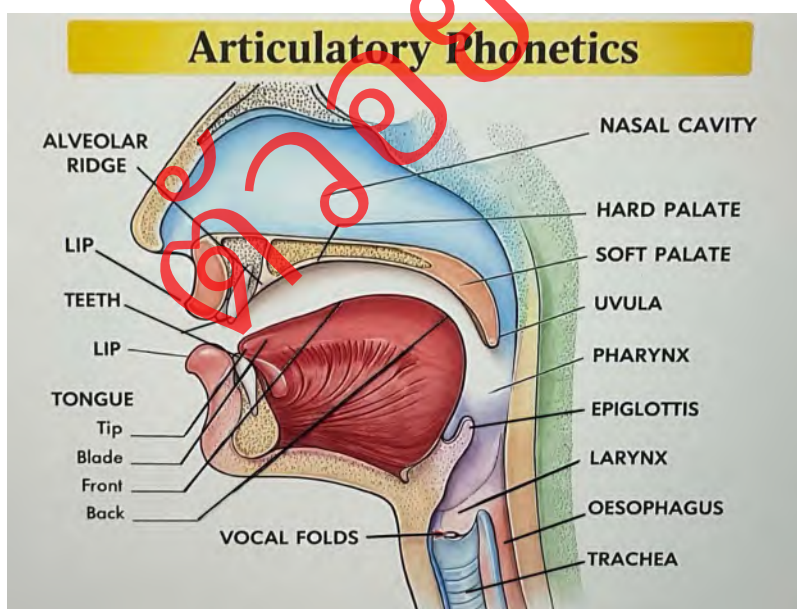
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<sup>1</sup>Ethnologue. (2025). *Ethnologue: Languages of the world* (26th ed.). SIL International.

## 1.2 Branches of the Phonetics

**Phonetics** is an empirical science, meaning it is based on the observation of facts, that studies human speech sounds. It examines how speech sounds are produced or articulated in vocal tract (*articulatory phonetics*), transmitted through the air in the form of soundwave (*acoustic phonetics*), and perceived by listeners (*auditory phonetics*)<sup>2</sup> (Ladefoged, 1967, pp. 74-75). Experts who study any aspect of phonetics are called 'phoneticians'. Phonetics is classified into three main branches: articulatory phonetics, acoustic phonetics, and auditory phonetics as explained below:

**1.2.1 Articulatory phonetics.** **Articulatory phonetics** is concerned with the human sound-producing capacity in general and examines the whole range of possible speech sounds. Therefore, the information which is afforded by phonetics need not apply necessarily to any language in particular.

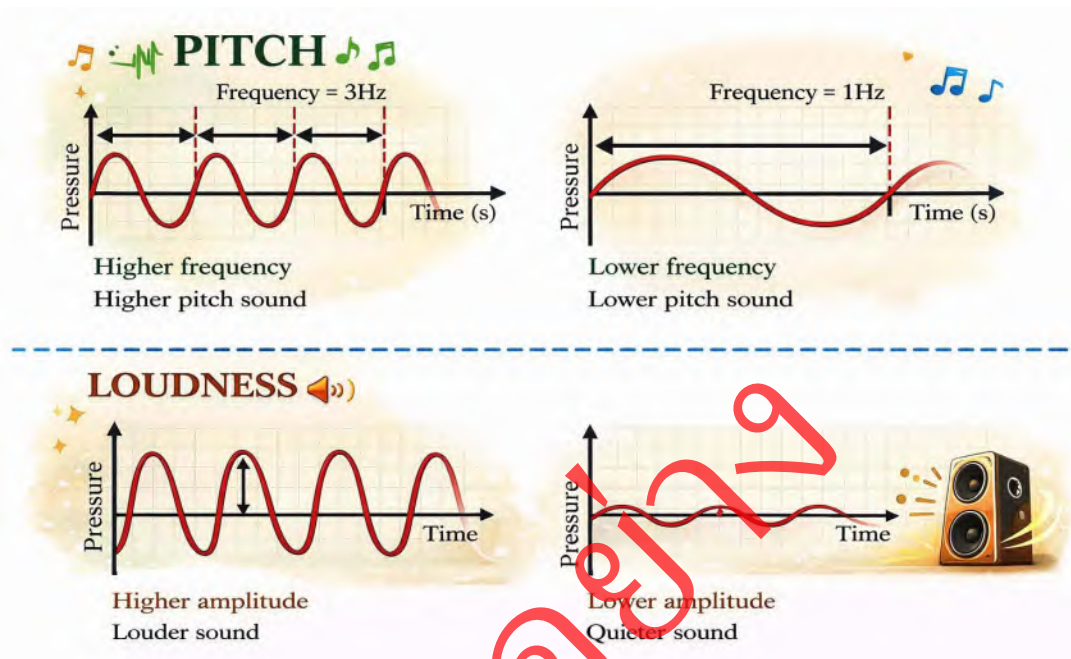


**Figure 1.1** Articulatory phonetics

(Created with ChatGPT, Google Gemini, and Apple Photos: iPad Pro)

<sup>2</sup>Ladefoged, P. (1967). *Three Areas of Experimental Phonetics* (pp.74-75). Oxford.

**1.2.2 Acoustic phonetics** is the study of acoustic properties of human speech including an analysis and description of the speech in terms of its physical characteristics (frequency, intensity, and duration)<sup>3</sup>.



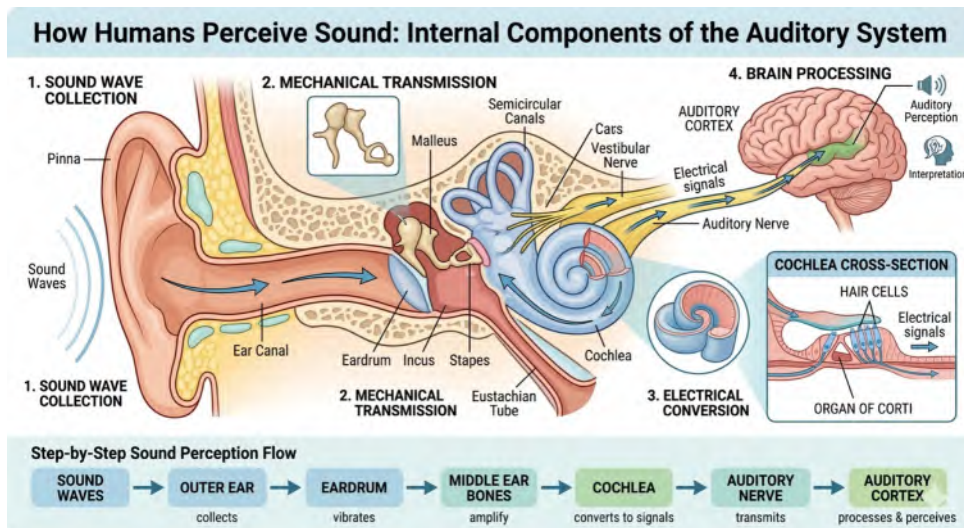
**Figure 1.2** The properties of sound waves<sup>4</sup>  
(Created with ChatGPT, Google Gemini, and Apple Photos: iPad Pro)

**1.2.3 Auditory phonetics.** Auditory phonetics is concerned with the hearing of speech sounds and with speech perception. It is the study of the relationships between speech stimuli and a listener's responses to such stimuli as mediated by mechanisms of the peripheral and central auditory systems in the brain (O'Connor, 1973, pp. 17, 96-124)<sup>5</sup>.

<sup>3</sup>Johnson, K. (2004). *Acoustic and auditory phonetics* (2nd ed.). Blackwell.

<sup>4</sup>Adapted from Labster Theory pages. (n.d.). *Sound properties*. <https://theory.labster.com/sound-properties-dbs/>.

<sup>5</sup>O'Connor, J. D. (1973). *Phonetics* (1st ed.). Penguin.



**Figure 1.3** How humans perceive sounds<sup>6</sup>  
(Created with ChatGPT, Google Gemini, and Apple Photos: iPad Pro)

## 1.3 The Role of Phonetics for Linguistics

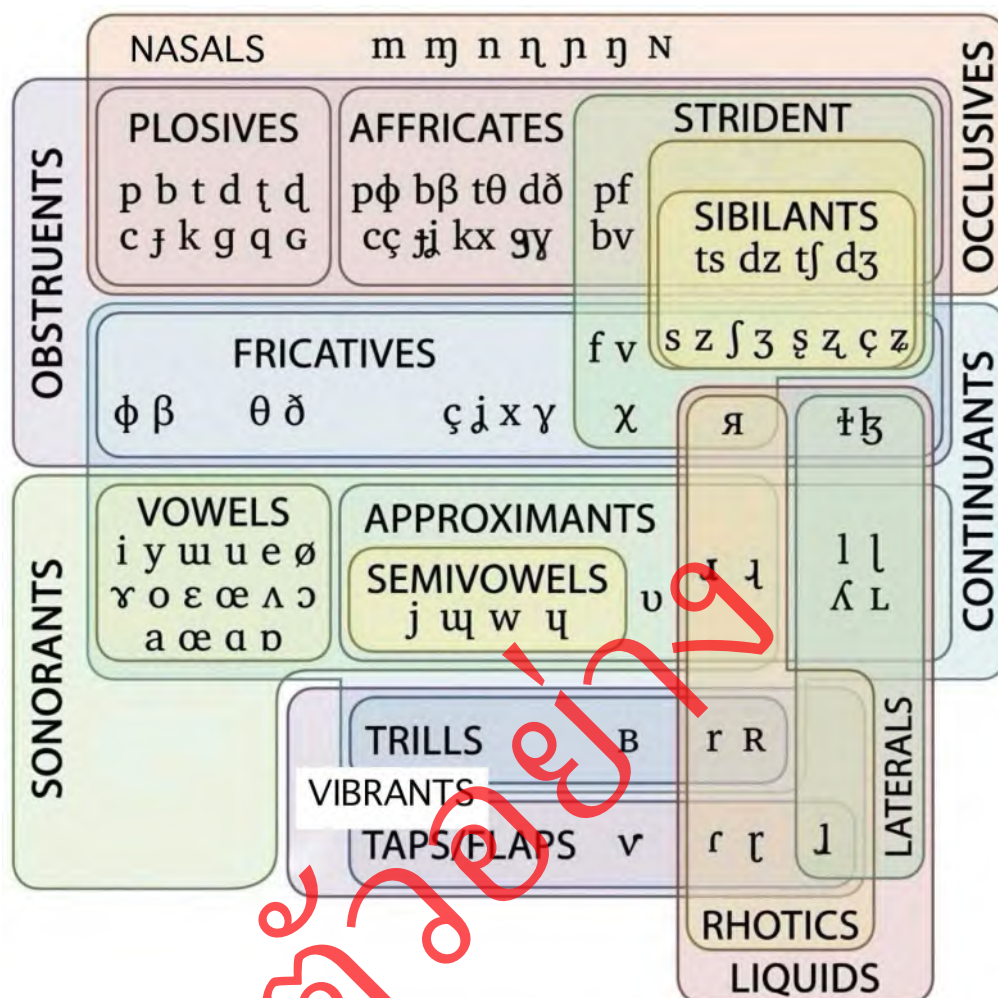
As a branch of linguistics, phonetics is the study of how the human speech sounds are produced, transmitted through the air, and perceived by listeners, regardless of their language background. Phonetics plays a crucial role in contributing to various fields in linguistics<sup>7</sup>.

**1.3.1 Teaching foreign languages: English and Thai.** Many Thai learners of English commonly struggle with pronouncing sounds such as [z], [v], [g], [ʃ], [ʒ], [tʃ], [dʒ], [ɹ], [r], and [ʌ], as these sounds do not exist in Thai phonology. This often leads to miscommunication. As a branch of phonetics, articulatory phonetics can help address these difficulties by analyzing how each sound is produced. For example, [z], [v], and [g] share phonetic similarities with [s], [f], and [k], respectively, but are distinguished by being voiced in the vocal folds. Similarly, many foreign learners of Thai

<sup>6</sup>Adapted from iFi Audio. (2018, July). *Transients and the human hearing: GTO filter* [Technical note]. <https://media.ifi-audio.com/wp-content/uploads/2020/02/iFi-audio-Tech-Note-The-GTO-Filter.pdf>.

<sup>7</sup>Danvithana, N. (1982). Role of phonetics for linguistics (Translation). *Language and Linguistics*, 1(1), 57–67. <https://so04.tci-thaijo.org/index.php/joling/view/127953>.



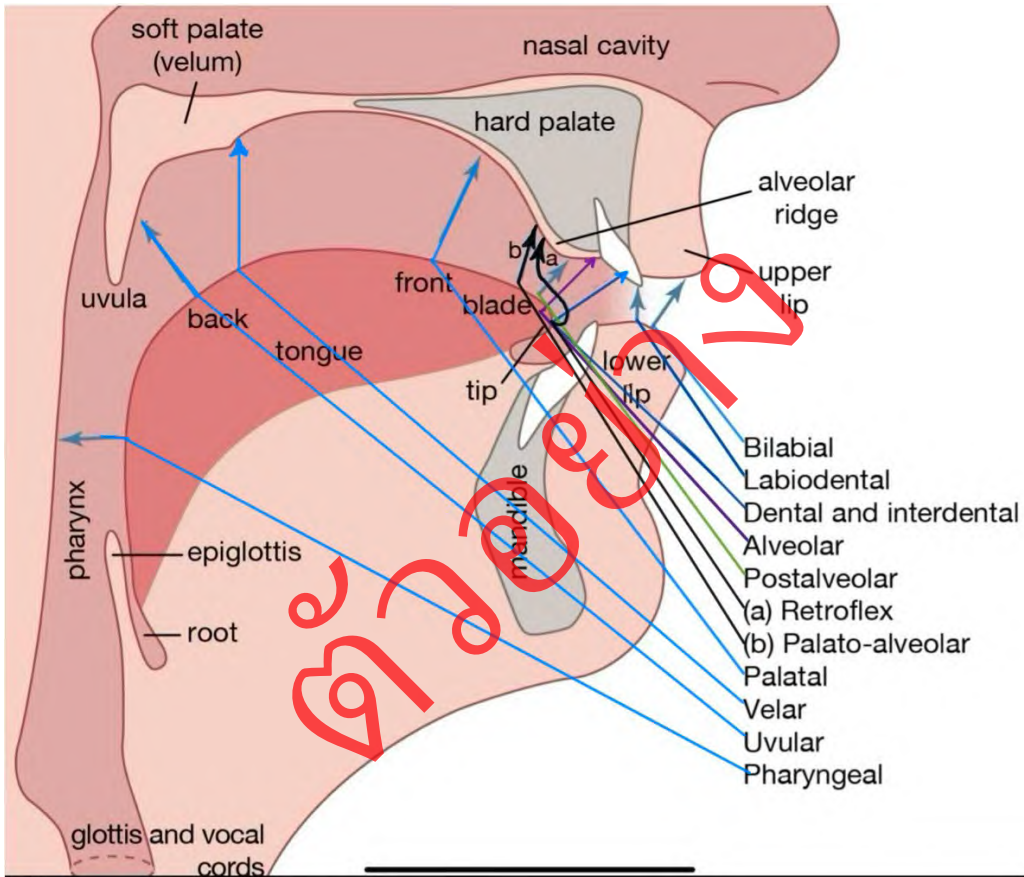


**Figure 4.1** Euler's diagram of a typical classification of sounds, manners of articulation, and phonological (distinctive) features

(Created with ChatGPT, Google Gemini, and Apple Photos: iPad Pro)

### 4.3 Place of Articulation

To describe a speech sound by the ‘place of articulation’ dimension, one needs to know that this dimension takes place when an (active) articulator makes contact with the opposite (passive) articulator which all is vocal tract wall. The following table illustrates the major places of articulation.



**Figure 4.2** Human vocal organs and points of articulation<sup>73</sup>  
(Created with ChatGPT, Google Gemini, and Apple Photos: iPad Pro)

<sup>73</sup>Adapted from Phonetics. (n.d.). *Encyclopedia Britannica*. Encyclopedia Britannica, Inc.  
<https://www.britannica.com/science/phonetics>



**Table 4.2** The major places of articulation (adapted from Davenport & Hannahs, 2005, p. 14)<sup>74</sup>

| Key words      | Passive articulator | Active articulator | Example                                                    |
|----------------|---------------------|--------------------|------------------------------------------------------------|
| bilabial       | upper lip           | lower lip          | [p <sup>h</sup> b m] as in ‘pat, <u>b</u> at, <u>m</u> at’ |
| labiodental    | upper teeth         | lower lip          | [f v] as in ‘fat, <u>v</u> at’                             |
| (inter) dental | upper teeth         | tongue tip         | [θ ð] as in ‘ <u>t</u> hin, <u>t</u> hat’                  |
| alveolar       | alveolar ridge      | tongue tip         | [s z] as in ‘sat, <u>z</u> oo’                             |
| retroflex      | postalveolar area   | curled tongue tip  | [ɻ] as in ‘rain’ (Am.E)                                    |
| postalveolar   | postalveolar area   | tongue blade       | [ʃ ʒ] as in ‘ <u>s</u> he, <u>a</u> zure’                  |
| palatal        | (hard) palate       | tongue front       | [j] as in ‘yacht’                                          |
| velar          | velum               | tongue back        | [k <sup>h</sup> g] as in ‘car, glass’                      |
| uvular         | uvular              | tongue back        | [ʀ ʁ] rarely found in common English                       |
| pharyngeal     | pharyngeal wall     | tongue root        | [ħ ʕ] not appeared in common English                       |
| glottal        | glottis             | vocal folds        | [h ʔ] as in ‘button’ ‘hot’                                 |

**4.3.1 Bilabials.** Bilabial sounds are formed by the upper lip touching the lower lip together. English has several bilabial sounds: [p<sup>h</sup> p p<sup>ɪ</sup> b m] as in ‘people, span, pop, ban, man’.

**4.3.2 Labiodentals.** Labiodental sounds are made by the lower lip in contact to the upper (front) teeth. English has two labiodental sounds: [f] and [v] as in ‘fin’ and ‘vine’.

**4.3.3 Dentals.** Dental (interdental) sounds are articulated by the tip of tongue touching the upper (front) teeth or the tongue tip sticking out through teeth. English has two interdental sounds: [θ] and [ð] as in ‘thy’ and ‘father’.

<sup>74</sup>Davenport, M., & Hannahs, S. J. (2005). *Introducing phonetics and phonology* (2nd ed.). Hodder Arnold.

# Articulatory Phonetics and English Pronunciation

“Discover how English sounds are truly made.

*Articulatory Phonetics and English Pronunciation* guides you through the captivating mechanics of speech—from the foundational concepts of **air-stream mechanisms** and human **articulation** to the intricate details of **consonants**, **vowels**, and **suprasegmental features** like **stress** and **intonation**.

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