

Gaëlle Ferré

Training in  
**ENGLISH  
PHONOLOGY**  
for the  
Agrégation

**Theory and Practice**



# Symbols and keywords

This section provides the list of symbols adopted in this book, based on the symbols of the International Phonetic Alphabet (IPA) and the conventions defined by the dictionaries recommended for the exam (Wells, 2008; Roach et al., 2011). However, in recent years, there have been accepted changes in the transcription of certain vowels to better reflect current pronunciation realities, both in Southern British English (SBE) and General American (GA)<sup>1</sup>. In this book, the older conventions are adopted, reflecting earlier transcription practices, which are more in line with the recommended dictionaries. Below are the new alternative conventions for both varieties of English:

**For SBE**, the vowel in words like *tap*, traditionally transcribed as /'tæp/, may now also be transcribed as /'təp/. Similarly, the vowel in *price* which was historically /'praɪs/, can now be transcribed as /'prʌɪs/ to reflect a different pronunciation. No changes apply in GA for these cases.

**In GA**, several vowels have also undergone accepted transcription changes, most of them reflecting vowel length. The vowel in *lot* can now be represented as /'lət/ without the length diacritic (in addition to the longer /'laɪt/), better reflecting its pronunciation in contemporary GA. The vowel in *nurse* can be transcribed as /'nɜːrs/ or /'nɜːs/ without a length marker, in addition to the older forms /'nɜːrs/ and /'nɜːs/. Similarly, the vowel in *port* can now appear as /'pɔːrt/, again without the length mark. Additionally, the vowel in *start* is accepted as /'stɑːrt/ without the length diacritic. This length neutralization does not apply to /ɪ/ and /ʊ/, as they would otherwise be confused with the weak vowels /i/ and /u/.

**Both SBE and GA** share some common changes. The vowel in *pet* can be transcribed as /'pɛt/, alongside the older /'pet/. The vowel in *square* now appears as /'skwɛ:/ as well as /'skweə/ in SBE and /'skwər/ or /'skwer/ in GA, providing more flexible representations of how these vowels are articulated.

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1. These changes are listed in the document published by O. Glain on the SAES website: <https://saesfrance.org/sept-2022-lepreuve-de-phonologie-a-lagregation-externe/>, last accessed 2025-03-12.

## IPA symbols

**SBE** : Southern British English

**GA** : General American

### Consonants

/p/	<b>p</b> at	/θ/	<b>b</b> ath	/h/	<b>h</b> at
/b/	<b>b</b> at	/ð/	<b>d</b> that	/m/	<b>m</b> outh
/t/	<b>t</b> ip	/s/	<b>s</b> lip	/n/	<b>n</b> urse
/d/	<b>d</b> oor	/z/	<b>z</b> oo	/ŋ/	<b>f</b> ang
/k/	<b>k</b> ick	/ʃ/	<b>ʃ</b> ampoo	/l/	<b>l</b> et
/g/	<b>g</b> oat	/ʒ/	<b>ʒ</b> television	/r/	<b>r</b> ose
/f/	<b>f</b> ur	/tʃ/	<b>tʃ</b> urch	/j/	<b>y</b> ellow
/v/	<b>v</b> ast	/dʒ/	<b>dʒ</b> udge	/w/	<b>w</b> hat

### Checked/lax vowels<sup>2</sup>

/ɪ/	kit	/ʌ/	strut	/ʊ/	<b>f</b> oot
/e/	dress	/æ/	trap	/ɒ/	lot (SBE)
/ə/	comma	/ə/ or /ər/	father (GA)	/i/	happy
/u/	influence				

### Free/tense vowels

/i:/	fleece	/a:/	bath	/u:/	<b>g</b> oose
/ɔ:/	north	/ɜ:/	nurse (SBE)	/ɜ:/ or /ɔ:r/	nurse (GA)

### Diphthongs

/aɪ/	price	/ɔɪ/	choice	/eɪ/	face
/aʊ/	mouth	/əʊ/	goat (SBE)	/oʊ/	goat (GA)
/ɪə/	near (SBE)	/eə/	square (SBE)	/ʊə/	cure (SBE)

## Keywords and their translation in French

Affix	affixe	Prominence	proéminence
Consonant	consonne	Pronounce	prononcer
Diphthong	diphthongue	Pronunciation	prononciation
Monophthong	monophthongue	Rhythm	rythme
Nucleus	noyau	Suffix	suffixe
Particle	particule	Vowel	voyelle
Prefix	préfixe		

2. Examples for vowels are based on Wells' (1982) lexical sets.

# Introduction

Preparing for the agrégation in English demands both intellectual rigor and sustained commitment. The complexity of the examination calls for a solid grounding in theoretical knowledge, as well as the ability to apply this knowledge in practical contexts. In particular, the phonology section often poses specific challenges for candidates, especially those with limited prior exposure to this domain. It is with these challenges in mind that the present volume was conceived. Its aim is to offer a structured and accessible path through the major topics of English phonology.

Drawing on twenty years of experience in training students for this demanding examination, I am delighted to contribute to their journey by providing this resource. Throughout these years, I have had the privilege of working with numerous dedicated and passionate students, whose curiosity and engagement have continually shaped my approach to teaching English phonology. This book is both a reflection of that experience and an attempt to give back to a community that has enriched my understanding of the subject.

The book offers a comprehensive overview of key topics in English phonology relevant to the agrégation. It is structured into two main parts: a theoretical section and a practical training section. The first part consists of five chapters, that cover essential concepts assessed in the exam. Chapter 1 introduces the sounds of English and their articulatory properties. Chapter 2 explores phonology and graphophonemics, focusing on sound-spelling correspondences. Chapter 3 presents fundamental morphological concepts, that serve as a foundation for Chapter 4, which examines lexical stress. Finally, Chapter 5 addresses the major aspects of intonation. These topics are integral to the agrégation, where candidates are systematically evaluated on all these areas. Each chapter concludes with a set of targeted exercises designed to help students assess their understanding of the concepts covered. The answers to these exercises are provided at the end of the manual, before the reference section and the index.

The second part of the book provides a series of practical exercises designed in the spirit of the exam. These exercises are based on texts sourced from the Project Gutenberg archive and include transcription tasks, analyses of stress patterns, graphophonemic correspondences, phonological processes, and intonation. Each set of exercises is followed by answers and explanatory comments. While these additional explanations

go beyond exam requirements, they are intended to enhance students' understanding of the underlying concepts.

Deschamps et al. (2000, 2004) authored the first major reference textbooks following the introduction of phonology into the agrégation in 1999. Their contributions were instrumental in shaping the examination syllabus, and their works remain foundational for exam preparation. More recent studies, referenced at the end of each chapter, reflect the evolving nature of the exam over time. Students are strongly encouraged to practice answering exam-style questions. The textbook I published in 2015, *Entraînement à l'épreuve de phonologie à l'agrégation d'anglais*, provides original test materials tailored for this purpose. Additionally, Bouvet's (2021) textbook, primarily aimed at CAPES candidates, emphasizes pedagogical approaches but remains highly relevant for the agrégation. Conversely, CAPES candidates may also find valuable insights in the present book.

A reminder regarding the exam format: the agrégation written exam lasts six hours and consists of three sections—phonology questions, a linguistic analysis of text segments, and a broader linguistic discussion. Effective time management is crucial, with no more than two hours recommended for the phonology section to ensure sufficient time for the remaining parts. Furthermore, while linguistic analyses are written in French, phonology questions must be answered in English, which is why this book is entirely in English.

Candidates are expected to adopt a style that is clear, concise, and technically accurate. Responses must be written in English using precise phonological terminology and avoiding stylistic flourishes or literary devices, which may signal a lack of familiarity with linguistic discourse. Each question should be answered independently, with clearly numbered responses to facilitate the corrector's task. While detailed justifications are sometimes required, particularly for stress-pattern or intonation analyses, these should be fully articulated in paragraph form, not presented as notes or bullet points. Telegraphic style should be avoided. When no justification is asked for—such as in transcription or stress-pattern identification—answers must still be carefully formatted to avoid ambiguity.

## Phonemic transcription

Phonemic transcription is a core component of the phonology paper in the agrégation d'anglais. Candidates are systematically required to transcribe a short passage (continuous transcription) as well as a list of isolated words. Unless otherwise specified, the transcription must be broad (phonemic) rather than narrow (phonetic), and must use the International Phonetic Alphabet (IPA).

Candidates must begin by clearly stating which variety of English they are using: Southern British English (SBE) or General American (GA). Both varieties are accepted in the exam, but the use of other varieties (e.g., Scottish, Australian) is not permitted, except in rare cases where the text explicitly calls for it. Once the variety

is chosen, consistency is essential: switching between SBE and GA mid-transcription will be penalised.

Phonemic transcriptions must be enclosed in slashes (/ /) and must not contain any diacritics, as these are only used in narrow (phonetic) transcription. IPA symbols must be accurately formed, both for vowels and consonants. Care must be taken not to confuse symbols that may appear similar (e.g., /ʒ/ and /z/), and no cursive or handwritten variants are accepted. Additionally, the transcription must avoid typographic errors such as using superscript characters, italics, or punctuation marks.

## Stress patterns

In transcriptions, word stress must always be indicated, using '//' for primary stress and '/.' for secondary stress, placed just before the stressed syllable. In the case of polysyllabic words, omitting stress marks is considered a major error. Monosyllabic content words (e.g., *home*, *ground*) are typically understood to be stressed in isolation and do not necessarily require stress marks, but for the sake of consistency and to avoid oversight in polysyllabic items, candidates are advised to systematically mark stress on all content words, even in monosyllables.

In connected speech, grammatical words—such as articles, auxiliaries, conjunctions, and pronouns—are generally unstressed, and their vowels are frequently reduced (e.g., *to* /tə/, *of* /əv/, *him* /ɪm/, *was* /wəz/). Candidates must reflect these reductions appropriately, bearing in mind the intonation unit structure and context (e.g., *he* may be reduced to /i/ after a consonant, but not after a pause).

## Connected speech phenomena

Candidates are expected to reflect relevant phonological processes that occur in connected speech, including linking and elision. In SBE, linking /r/ should be transcribed when the underlying /r/ appears in the spelling and links two vowels across word boundaries (e.g., *father and son* → /'faːðər ən 'sən/). However, intrusive /r/ (e.g., *I saw it* → /ai 'sɔːr it/) is not to be transcribed, as it is not reflected in the orthography. Juncture phenomena should be treated with care, and segmentation must be accurate: transcription must preserve word boundaries with appropriate spacing but not include any punctuation, capital letters, or prosodic annotation, unless explicitly required.

Elision and assimilation may be reflected only if they are systematic and predictable and appear in the dictionaries for the chosen variety. For example, in *next day*, the cluster /kstd/ may undergo elision and assimilation to /ksd/ or /gzd/, depending on how informal the speech is. However, if such processes are not listed as acceptable dictionary variants, they should be omitted from the phonemic transcription.

## Formatting and practical presentation

Transcriptions must be legibly written, using well-formed IPA symbols. Each transcription task must be clearly numbered and separated from commentary. In continuous transcription, it is customary to transcribe the passage as a block of text, maintaining word spacing but avoiding punctuation and capitalisation. In lists of isolated words, each word should be transcribed on its own line, with the stress marked and the word repeated in orthographic form for clarity.

Candidates should avoid over-transcription: only transcribe what is asked. For example, if only the initial vowel is to be discussed, it is unnecessary—and risky—to transcribe the entire word. Similarly, in stress-pattern questions, if only the stress schema is required, a full phonemic transcription is not expected and may lead to avoidable mistakes.

## Graphophonemic correspondence questions

Graphophonemic questions require candidates to analyse the relationship between graphemes (letters or letter sequences) and their phonological realisations. These questions test the candidate's ability to explain why a particular segment of a word is pronounced in a given way, based on orthographic cues, phonological context, morphological structure, and, in some cases, etymology. They are often perceived as among the most complex parts of the exam because they require the integration of multiple linguistic levels in a single analysis.

Candidates may be asked to describe the pronunciation of a specific grapheme or letter string (e.g., <a>, <ough>, <s>) in a series of words, or to name and describe the phonological processes at work. In these cases, the pronunciation itself is usually not to be transcribed; rather, the focus is on justifying the pronunciation in relation to the written form and its linguistic environment.

The first step in answering such questions is to identify the default phonemic value of the grapheme in question—its most common or “base” realisation. The candidate must then determine what factor(s) account for deviations from this base value in the examples provided. These factors typically include:

- Orthographic environment: For example, the silent <e> at the end of *cane* signals a tense diphthong /eɪ/ in contrast to the checked vowel /æ/ in *can*.
- Phonological environment: Voicing assimilation, for instance, explains why the final <s> is pronounced /s/ in *cats* and /z/ in *bags*, depending on the voicing of the preceding consonant.

- Stress-related effects: Stress influences vowel quality, as in the contrast between *present* (noun: /'prezənt/) and *present* (verb: /pri'zent/), where reduction applies in unstressed syllables.
- Morphological structure: Some alternations are due to morphological boundaries, e.g., *house* (noun) → /haus/ vs. *to house* (verb) → /haʊz/, which differ by voicing based on word category.
- Diachronic or etymological origin: For example, <ch> is pronounced /k/ in *chorus* due to its Greek origin, unlike the /tʃ/ found in words of Germanic origin like *chicken*.
- Phonotactic constraints: Some pronunciations are governed by the phonological permissibility of certain sound combinations in specific syllabic positions (e.g., the velarisation of /l/ in *ball* vs. its clear articulation in *let*).

In preparing responses, candidates should favour a systematic approach. Begin with the base pronunciation, identify the conditioning environment, and explain how it leads to the attested realisation. Use correct phonological terminology (e.g., “pre-fortis clipping”, “voicing assimilation”, “epenthesis”) and avoid vague or overly general explanations. If multiple processes are at play, they should be clearly distinguished and ordered, particularly in derived or inflected forms.

It is also important to be aware that a single question may include multiple unrelated examples, requiring the candidate to analyse different grapheme-sound correspondences within the same answer.

Candidates are not expected to perform a full phonemic transcription unless explicitly instructed to do so. However, it is often useful to cite phonemic forms when they help to support the explanation. This should be done sparingly and only when it enhances the clarity of the analysis.

As with other questions in the phonology paper, the answers must be written in clear, precise English, in fully developed paragraphs. Each explanation should be logically structured, avoiding excessive detail unless it serves a clear analytical purpose. The goal is not to recite phonological theory, but to show the ability to apply it effectively to specific, context-sensitive cases.

## **Intonation questions**

Intonation questions assess candidates’ understanding of prosodic structure in English, particularly in relation to tone-unit segmentation, nuclear stress placement, and intonation contours (tones). These questions may take several forms: candidates may be asked to mark intonation features on an utterance (without justification),

to justify an intonational analysis, or to assess the appropriateness of an intonation pattern that has been provided.

Candidates are expected to follow the British School model, which is the convention adopted in jury reports and answer keys. The three core components that must be addressed (explicitly or implicitly, depending on the task) are:

- Tonality: segmentation of the utterance into intonation units (also called tone-units or intonation phrases);
- Tonicity: placement of the nucleus (tonic syllable) within each tone-unit;
- Tone: the pitch movement associated with the nuclear syllable (e.g., fall, rise, fall-rise).

Unless otherwise instructed, candidates should not transcribe the full utterance phonetically. Instead, they should present their answers by segmenting the utterance into tone-units, underlining the tonic syllable, and indicating the direction of the tone with an arrow or label before the nucleus (e.g.,  $\nearrow$  for rise,  $\searrow$  for fall). Punctuation marks and capital letters must be avoided, as they belong to the written domain and not to the spoken signal.

There are generally three formats of intonation questions:

**Notational tasks without justification:** Candidates are asked to place tone-unit boundaries, identify the tonic syllable, and mark the tone. In these cases, a brief, symbolic notation is sufficient, as in:

|| this is  $\nearrow$  better | than  $\searrow$  Lincoln's Inn Fields |  $\nearrow$  isn't it ||

**Justification of intonation patterns:** Candidates must explain their segmentation choices, tonic placement, and tone selection. Justifications should be structured around:

- Syntactic phrasing and information structure (for tonality),
- Focus (broad or narrow) and contrastive stress (for tonicity),
- Pragmatic function and intonational meaning (for tone).

**Assessment of a proposed intonation pattern:** Candidates must evaluate whether a given analysis is appropriate and provide a detailed explanation of their reasoning. Even if the analysis is correct, the candidate must explicitly justify each of the three elements listed above.

When segmenting utterances, candidates should identify intonation boundaries based on syntactic and prosodic cues. Coordinated clauses, subordinate structures, and insertions may warrant separate tone-units. Breath groups and pausal junctures are also helpful guides.

The tonic syllable typically falls on the last lexical item of the tone-unit, unless contrast or focus calls for an earlier placement. Candidates must distinguish between default nuclear stress and contrastive/emphatic nuclear stress, justifying any deviations from the default.

The tone itself (fall, rise, fall-rise, rise-fall) is context-dependent. Declaratives typically carry a falling tone, while yes/no questions often have a rising tone. A fall-rise may suggest reservation, politeness, or implicature, and its interpretation must be grounded in the pragmatic context of the utterance, not in vague psychological speculation. Candidates should avoid attributing tone choices to the “emotions” or “personality” of the characters unless such claims are explicitly supported by textual cues.

When asked to mark intonation, candidates must adopt a consistent and readable system. The use of slashes or vertical bars to indicate tone-unit boundaries, arrows or diacritics for tones, and underlining or bold for the tonic syllable is recommended, as in:

|| ↗ oh | you've brought ↘ glasses | ↘ have you ||

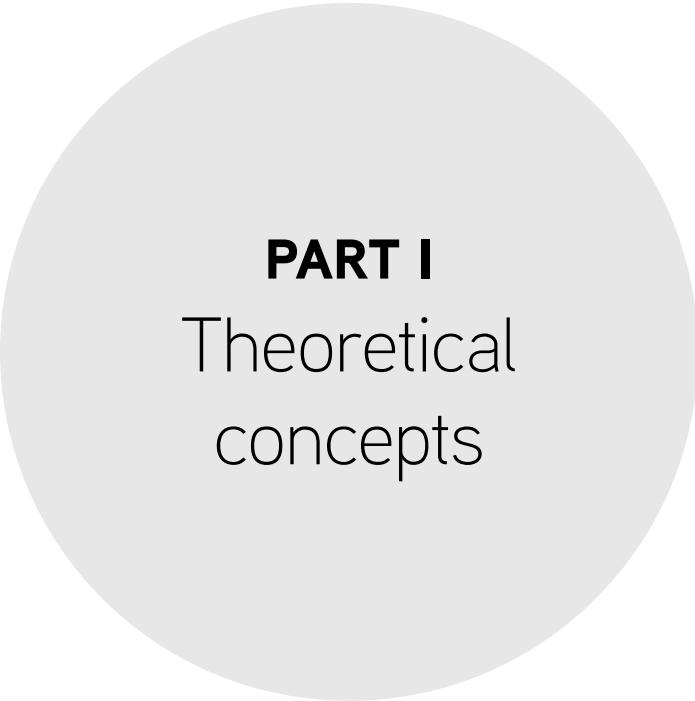
Clarity is essential. A confused or inconsistent notation may lead to the answer being penalised, even if the analysis is conceptually correct. The symbols must correspond to those defined in the candidate's chosen system, and any deviations from standard conventions must be clearly explained. Candidates are strongly discouraged from drawing intonation contours or melodic curves above the sentence as a means of representing pitch movement. While such visual representations may be helpful for personal study, they are not part of the expected conventions in the agrégation exam. They often lack precision, are difficult to interpret, and do not clearly indicate the structure of tone-units, tonic syllables, or specific tone types. Instead, candidates should rely on symbolic notations and clearly structured analyses following the standard conventions outlined in this volume.

## Comparing SBE and GA

While candidates are not expected to provide a comprehensive phonological comparison between British and American English, they must be familiar with the major systematic differences between SBE and GA. This knowledge is essential for recognizing key distinctions in pronunciation, especially in questions that explicitly require comparison. Candidates should be able to identify and explain phonemic-level differences, such as the pronunciation of postvocalic /r/ (present in GA, absent in SBE), the use of /æ/ vs. /a:/ in words like *dance*, or differences in vowel quality in items such as *lot*, *cloth*, *caught*, or *fear*. In most cases, only one salient phonological differ-

ence is expected to be noted per word, unless otherwise specified. Answers should be succinct, focusing on the most relevant contrast, and may include a brief phonemic transcription in both varieties to illustrate the distinction. Overly detailed or speculative analyses are not encouraged; the aim is to demonstrate a clear understanding of systematic patterns and to communicate that understanding effectively within the constraints of the exam format.

As a final word, I sincerely hope this manual proves helpful, and I wish you the very best of luck with your preparation.



## **PART I**

### Theoretical concepts



# CHAPTER 1

# The sounds of English

This first chapter, *The Sounds of English*, provides a detailed overview of the fundamental aspects of English phonetics. We begin by exploring consonants, focusing on the distinction between voiced and voiceless sounds, followed by a discussion of places and manners of articulation. The chapter then moves on to vowels, examining key contrasts such as tense versus lax vowels, the concept of vowel clipping, and the main features of diphthongs. Attention is also given to the differences between British and American English, both in terms of systemic and non-systemic features. Further sections address syllables, as well as various processes in connected speech, including reduction, assimilation, elision, and linking. Finally, the chapter covers transcription in connected speech, with a particular focus on broad and narrow transcriptions and the use of diacritics, and concludes with a list of suggested readings for further exploration.

## 1.1 Consonants

A consonant is a speech sound produced by constricting or obstructing the airflow in some way within the vocal tract. This obstruction can occur at various places in the mouth (such as the lips, teeth, or the roof of the mouth, as shown in Figure 1.1 below) and can vary in how much air is released and when, creating different types of consonant sounds. Consonants are typically contrasted with vowels, which involve more open airflow.

### 1.1.1 Voiced and voiceless sounds

In languages, the difference between voiced and voiceless sounds is based on whether the vocal cords vibrate during the production of the sound.

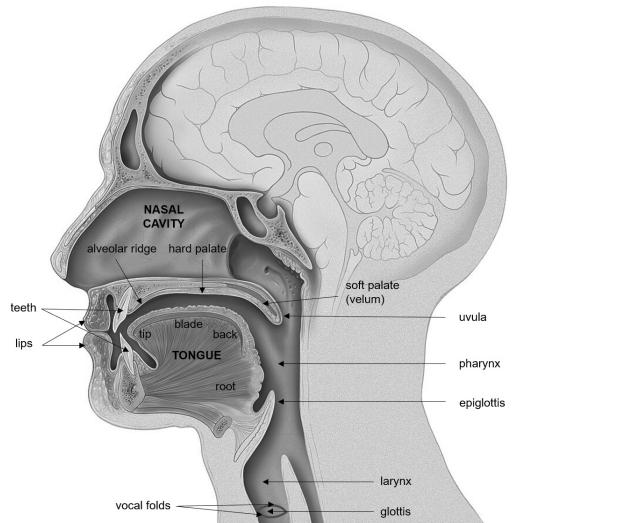


Figure 1.1 – Speech articulators. Background image: © Patrick J. Lynch, 2006. Used under the Creative Commons Attribution 2.5 License 2006 (<https://creativecommons.org/licenses/by/2.5/>). Labels were added as part of this work.

**Voiced sounds:** The vocal cords vibrate as air passes through them. You can feel this vibration by placing your hand on your throat while saying a voiced sound. Examples of voiced sounds in English include the consonants /b/, /d/, /g/, /v/, /z/, and /ʒ/ (as in *measure*), as well as nasals, approximants and all vowel sounds.

**Voiceless sounds:** The vocal cords do not vibrate when producing the sound. Voiceless sounds rely on airflow and the placement of articulators without the use of vocal cord vibration. Examples of voiceless sounds in English include /p/, /t/, /k/, /f/, /s/, and /ʃ/ (as in *ship*).

In pairs like /b/ (voiced) and /p/ (voiceless), the mouth shape is similar, but the difference lies in whether the vocal cords vibrate.

## 1.1.2 Places of articulation

Places of articulation refer to the different locations in the vocal tract where consonant sounds are produced. These locations involve specific areas of the mouth, teeth, tongue, and vocal cords that create varying degrees of obstruction or constriction of the airflow. In English, several distinct places of articulation give rise to different types of consonant sounds, which can be described based on where in the mouth the sound is made.

**Bilabial consonants:** A bilabial consonant is a sound that is produced by bringing both lips together to obstruct the airflow. The term “bilabial” comes from Latin: bi- meaning “two”, and labia meaning “lips”. In English, the four bilabial consonants are:

/p/	(as in <i>pat</i> )	voiceless bilabial plosive
/b/	(as in <i>bat</i> )	voiced bilabial plosive
/m/	(as in <i>mat</i> )	voiced bilabial nasal
/w/	(as in <i>what</i> )	voiced bilabial approximant

**Labiodental consonants:** A labiodental consonant is a sound produced by placing the upper teeth against the lower lip, creating a partial obstruction of the airflow. The term labiodental combines labio- (referring to the lips) and dental (referring to the teeth). In English, the two labiodental consonants are:

/f/	(as in <i>fun</i> )	voiceless labiodental fricative
/v/	(as in <i>van</i> )	voiced labiodental fricative

**Dental consonants:** A dental consonant is a sound that is produced by placing the tip of the tongue against the upper teeth. This contact either completely blocks or partially restricts the airflow, depending on the type of consonant. In English, dental consonants are typically the following:

/θ/	(as in <i>think</i> )	voiceless dental fricative
/ð/	(as in <i>this</i> )	voiced dental fricative

**Alveolar consonants:** An alveolar consonant is a sound produced by raising the tongue to the alveolar ridge, which is the bony ridge located just behind the upper front teeth (see Figure 1.1). The tongue either touches or comes very close to the ridge, depending on whether the sound is a stop or a fricative. In English, alveolar consonants include:

/t/	(as in <i>top</i> )	voiceless alveolar stop
/d/	(as in <i>dog</i> )	voiced alveolar stop
/s/	(as in <i>sit</i> )	voiceless alveolar fricative
/z/	(as in <i>zoo</i> )	voiced alveolar fricative
/n/	(as in <i>no</i> )	voiced alveolar nasal
/l/	(as in <i>love</i> )	voiced alveolar lateral approximant

**Post-alveolar consonants:** A post-alveolar consonant is a sound produced by placing the tongue just behind the alveolar ridge, in the area between the alveolar ridge and the hard palate. This place of articulation is slightly further back in the mouth than for alveolar consonants. In English, post-alveolar consonants are:

/ʃ/	(as in <i>ship</i> )	voiceless post-alveolar fricative
/ʒ/	(as in <i>measure</i> )	voiced post-alveolar fricative
/tʃ/	(as in <i>chop</i> )	voiceless post-alveolar affricate
/dʒ/	(as in <i>judge</i> )	voiced post-alveolar affricate
/r/	(as in <i>red</i> )	voiced post-alveolar approximant

**Palatal consonants:** A palatal consonant is a sound produced by raising the body of the tongue to make contact with or come close to the hard palate, which is the roof of the mouth just behind the alveolar ridge. In English, the only palatal consonant is:

/j/ (as in *yes*) voiced palatal approximant

**Velar consonants:** A velar consonant is a sound produced by raising the back of the tongue to the velum, or soft part of the roof of the mouth near the back of the oral cavity. In English, the three velar consonants are:

/k/	(as in <i>cat</i> )	voiceless velar stop
/g/	(as in <i>go</i> )	voiced velar stop
/ŋ/	(as in <i>sing</i> )	voiced velar nasal

**Gottal consonants:** A glottal consonant is a sound produced at the glottis, which is the space between the vocal cords in the larynx. Glottal consonants are articulated by either constricting or closing the vocal cords. Glottal sounds are unique because they don't involve any movement of the tongue or other articulators in the mouth—only the vocal cords are involved. In English, the glottal consonant is:

/h/ (as in *hat*) voiceless glottal fricative

Additionally, in some dialects of English, there is another glottal sound called the glottal stop [?]. It is a sound produced by briefly closing the vocal cords, and is often found in words like *butter* (pronounced without the /t/ in some accents) or *uh-oh*. In some dialects, the glottal stop can replace /t/ in certain contexts (e.g., [bɒʔl] for *bottle*).

### 1.1.3 Manners of articulation

Manner of articulation refers to how the airflow is manipulated or obstructed in the vocal tract during the production of consonant sounds. This involves the degree of constriction, the type of obstruction, and the involvement of different parts of the vocal tract, such as the velum. The manner of articulation is an essential feature in classifying consonants, as it affects the sound quality and how the consonant is produced. Places and manners of articulation for English sounds are summarized in Table 1.7 at the end of this section.

**Plosives<sup>1</sup>:** A plosive is produced by completely obstructing the airflow in the vocal tract, causing the air pressure to build up behind the point of closure, before it is released. In English, the plosives are:

/p/	(as in <i>pat</i> )	voiceless bilabial plosive
/b/	(as in <i>bat</i> )	voiced bilabial plosive
/t/	(as in <i>top</i> )	voiceless alveolar plosive
/d/	(as in <i>dog</i> )	voiced alveolar plosive
/k/	(as in <i>cat</i> )	voiceless velar plosive
/g/	(as in <i>go</i> )	voiced velar plosive

**Fricatives:** A fricative consonant is produced by forcing air through a narrow constriction in the vocal tract, causing friction or turbulence. The airflow is not completely blocked but is restricted enough to create a continuous sound. Note that /h/ is the only fricative that does not have a voiced counterpart. In English, the fricative consonants are:

/f/	(as in <i>fun</i> )	voiceless labiodental fricative
/v/	(as in <i>van</i> )	voiced labiodental fricative
/s/	(as in <i>sit</i> )	voiceless alveolar fricative
/z/	(as in <i>zoo</i> )	voiced alveolar fricative
/ʃ/	(as in <i>ship</i> )	voiceless post-alveolar fricative
/ʒ/	(as in <i>measure</i> )	voiced post-alveolar fricative
/h/	(as in <i>hat</i> )	voiceless glottal fricative

**Affricates:** An affricate is a consonant that begins as a plosive and is released into a fricative with a small opening between the tongue and the roof of the mouth. Affricates therefore combine the characteristics of both manners of articulation. The airflow is momentarily stopped, then released with friction. In English, the two affricate consonants are:

/tʃ/	(as in <i>chop</i> )	voiceless post-alveolar affricate
/dʒ/	(as in <i>judge</i> )	voiced post-alveolar affricate

**Nasals:** A nasal consonant is produced by blocking the airflow in the mouth but allowing air to flow through the nasal cavity. This is achieved by lowering the velum (the soft part of the roof of the mouth located behind the hard palate), which opens the passage to the nose. In English, the three nasal consonants are:

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1. You will also find the word “stop” in the literature, although the two words are not strictly equivalent. A stop is a sound produced by completely blocking the airflow in the vocal tract for a brief moment, followed by its release. A plosive is a specific type of stop where the release creates a noticeable burst of air or sound. While all plosives are stops, not all stops are plosives, as some stops, like nasals, involve closure without the explosive release typical of plosives.

/m/	(as in <i>mat</i> )	voiced bilabial nasal
/n/	(as in <i>no</i> )	voiced alveolar nasal
/ŋ/	(as in <i>sing</i> )	voiced velar nasal

**Approximants:** Approximants are sounds in which the articulators come close to each other but do not create a complete closure, so that air can flow out quite freely. These sounds include liquids like /l/ and /r/, where the tongue creates a partial constriction, and glides like /j/ and /w/, where the tongue moves smoothly toward a vowel position. Approximants are typically characterized by their relatively open articulation compared to other consonants like stops or fricatives. In English, the liquid consonants are:

/l/	(as in <i>love</i> )	voiced alveolar lateral approximant
/r/	(as in <i>red</i> )	voiced post-alveolar approximant

And the glide consonants are:

/j/	(as in <i>yes</i> )	voiced palatal approximant
/w/	(as in <i>wet</i> )	voiced labial-velar approximant

	Bil-abial	Lab.-dent.	Dent-al	Alve-olar	Post-alveolar	Palat.	Velar	Glot-tal
Plosive	p b			t d			k g	
Affricate					tʃ dʒ			
Fricative		f v	θ ð	s z	ʃ ʒ			h
Nasal	m			n			ŋ	
Lat. appr				l				
Approximant	w				r	j		

Table 1.7 – Consonant sounds in English

## 1.2 Vowels

A vowel is a speech sound produced with little to no obstruction of the airflow in the vocal tract. Unlike consonants, which involve constriction or closure in the mouth, vowels are produced by shaping the mouth and adjusting the position of the tongue, without blocking the airflow. Vowels are typically characterized by their open, resonant quality, and they serve as the nuclei of syllables. English vowels are shown in the vowel charts in Figure 1.2.

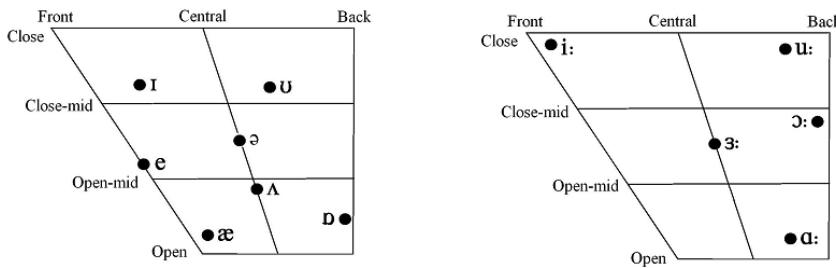


Figure 1.2 – English lax (left) and tense vowels (right)

### 1.2.1 Tense or free vowels

Tense (or free) vowels in English refer to a category of vowels that are produced with more tongue tension and a higher degree of muscular effort compared to lax vowels. These vowels are often longer in duration and tend to occur in open syllables (syllables that end in a vowel), making them “free” in terms of syllable structure. They are also known for their tendency to appear in stressed syllables (although this is not necessarily the case, especially in compounds).

- **Tongue Tension:** Tense vowels are produced with greater muscular tension and more precise tongue positioning.
- **Syllable Position:** They typically occur in open syllables (syllables that end in a vowel) or stressed syllables.
- **Longer Duration:** Tense vowels are generally longer in duration compared to their lax counterparts.
- **More Extreme Articulatory Position:** Tense vowels tend to be articulated with the tongue positioned more toward the extremes of the vowel space (high, low, front, back) than lax vowels.

Here is a list of the tense vowels in English:

- /i:/ (as in *beat*) – A high, front, tense vowel. The tongue is positioned high and towards the front of the mouth, with more tension than the lax /ɪ/ (as in *bit*)
- /u:/ (as in *boot*) – A high, back, tense vowel. The tongue is positioned high and towards the back of the mouth, with tension and a rounded lip shape