Teaching Pronunciation: A Course Book and Reference Guide

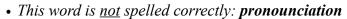
Second Edition. By Marianne Celce-Murcia, Donna M. Brinton, Janet M. Goodwin, with Barry Griner

Chapter notes prepared by Marla Yoshida

Use these notes to guide you as you read each chapter in the textbook. It's a wonderful book, but very detailed—sometimes with more details than you really need to know. The handouts point out the most important points that you really need to know.

Before we get started, look carefully at these important vocabulary words:

- **Pronounce** (verb): Notice that it's spelled with "ou" in the second syllable.
- **Pronunciation** (noun): It's spelled with "u" in the second syllable.



• And this is <u>not</u> a real word: **pronunciate** (Cross them out now so you won't forget!)



Teaching Pronunciation: Chapter 1 "The History and Scope of Pronunciation Teaching"

How has pronunciation been taught through the years?

- There have been two basic groups of approaches:
 - Listen and repeat. (The Intuitive-Imitative Approaches)
 - Analyze and understand. (The Analytic-Linguistic Approaches)
- Different teaching methods have had different opinions about the importance of learning correct pronunciation and about how pronunciation should be taught. See Appendix 1, page 449, for a chart that summarizes various teaching methods' approaches to teaching pronunciation.

What is the main emphasis of pronunciation teaching today?

- The most prominent teaching method today is Communicative Language Teaching. It emphasizes that the main purpose of language teaching is to help students learn to communicate. To do this, they need intelligible pronunciation.
- "The goal of teaching pronunciation to ... learners is not to make them sound like native speakers of English. With the exception of a few highly gifted and motivated individuals, such a goal is unrealistic. A more modest and realistic goal is to enable learners to surpass the threshold level so that their pronunciation will not detract from their ability to communicate." (p. 9)

Teaching Pronunciation: Chapter 2 "Research on the Teaching and Acquisition of Pronunciation Skills"

Many factors influence the learning of pronunciation

Age of the learner

- Young children can acquire good pronunciation more easily than adults.
- Children and adults learn pronunciation in different ways.
- Adults also have some advantages in learning pronunciation.

Exposure to the target language

• Greater exposure to the target language makes it easier to acquire good pronunciation.

Amount and type of prior pronunciation instruction

• If learners have had good pronunciation training before, this will help them. If they've had ineffective training or no training, they're at a disadvantage.

Aptitude, attitude, and motivation

- Natural ability: Some people may have a "talent" for pronunciation.
- Personality factors: People who are more adaptable may have more success in pronunciation.
- "Language ego": Language, and especially pronunciation, is a powerful part of our concept of who we are. Sometimes it's scary to change that. Some learners are more flexible in being willing to change something so basic about themselves. We say they have "high ego permeability."
- Motivation: In order to improve pronunciation, the learner must want to improve.

The role of the native language

- The learner's native language affects the learning of pronunciation.
- Sometimes this effect is bad, but sometimes it is good. There can be both positive transfer and negative transfer.
- Unfamiliar sounds or sound combinations may be difficult to pronounce.
 - An L1 sound may be substituted for an L2 sound.
 - The phonological rules of L1 may be mistakenly applied to L2.
- Fossilization: Old habits are hard to break, but it can be done.

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New directions in research

- In teaching pronunciation, we shouldn't think only about individual sounds. Intonation, rhythm, and changes in connected speech are also important.
- Voice quality—the overall characteristics of a speaker's voice, such as average pitch, tenseness of the muscles of the throat and vocal tract—or whether the speaker's voice sounds breathy, nasal, etc.—also have a strong influence on how a speaker's pronunciation sounds.
- As English becomes an international language, the emphasis of pronunciation teaching will probably move away from trying to make learners sound like native speakers and toward helping them become more intelligible in speaking with both native and nonnative speakers of English.

Part 2: The Sound System of NAE: An Overview

Segmental features: The individual sounds (phonemes) of a language—the vowel and

consonant sounds.

Suprasegmental features: Aspects of pronunciation that affect more than one sound segment,

such as stress, intonation, and rhythm—the musical aspects of

pronunciation.

What do you need to know when you teach pronunciation?

• You need to know how our mouths produce the various sounds of the language.

- You need to know how stress, rhythm, connected speech, and intonation work.
- You need to understand problems that your students might have with pronunciation.
- You need to know how to teach these things to your students and help them practice effectively.
- You need to choose how much you'll teach your students. You can't tell them all the details that you know. It would be too much. You need to decide what to include and what to leave out.

A communicative framework for teaching pronunciation. Principles:

- Language is best learned through communication.
- Classroom materials should reflect the interest and needs of the learners and create a desire to communicate in the target language.
- Learners acquire language most efficiently when they are active participants in a lesson.
- The language syllabus should focus on enabling learners to express their ideas in a variety of social interactions.
- Errors are a natural part of the communicative process. It's OK to take risks.

Steps in a pronunciation lesson using a communicative framework

- Description and analysis. Oral and written illustrations of how the feature is produced and when it occurs within spoken discourse.
- Listening discrimination. Focused listening practice with feedback on learners' ability to correctly discriminate the feature.
- Controlled practice. Oral reading of minimal-pair sentences, short dialogues, etc., with special attention paid to the highlighted feature in order to raise learner consciousness.
- Guided practice. Structured communication exercises, such as information-gap activities or cued dialogues, that enable the learner to monitor for the specified feature.
- Communicative practice. Less structured, fluency-building activities that require the learner to attend to both form and content of utterances.

Teaching Pronunciation: Chapter 3 "The Consonant System"

Phonology: The study of speech sounds in language.

Phonemes: The distinctive sounds of a language; the sounds that a native speaker considers to be

separate sounds. Changing from one phoneme to another causes a change in meaning.

Every language has its own set of phonemes. Every language is different.

Allophones: Variations in sound that are still felt to be the "same" sound, even though in reality

they are slightly different. Changing from one allophone to another might sound odd,

but it doesn't cause a change in meaning.

For example, the /k/ sounds in "car" and "key" don't sound exactly the same, but we *hear* them as being the same sound. The /n/ sounds in "pan," "panda," "pancake," and "panther" don't sound exactly the same, but we *hear* them as the same sound. They're

all allophones of the same phoneme.

We can divide phonemes into two groups:

Consonants: The sounds in which the air stream meets some obstacles on its way up from the

lungs. Words like "big," "map," and "see" begin with consonants.

Vowels: The sounds in which the air stream moves out very smoothly. Words like "apple,"

"east," "over," and "out" begin with vowels.

Every language has consonants and vowels, but no two languages have exactly the

same ones.

Minimal pair: Two words that differ by just one sound, for example, late and rate, beat and bit, sat

and sap. Minimal pairs can be used in many different ways in pronunciation practice.

NAE: North American English, the standard dialect of the U.S. and Canada (although there

are slight differences between U.S. and Canadian English).

Letters and sounds are not the same thing. A sound can be heard, but not seen. A letter is a written symbol that *represents* one or more sounds. When we talk about consonants and vowels, we're going to be talking about sounds, not the letters that represent them.

Normal writing systems don't represent sounds perfectly. This is very true in English. For example, the letter "g" represents different sounds in "girl" and "giant." The letter "a" can represent several different sounds, as in "cat," "came," "car," "care" and "about." This is why we need a special set of symbols, called a phonemic alphabet, to represent sounds. There are many variations of these symbols. The chart on the next page shows the symbols used in *Teaching Pronunciation*.

Should you teach a phonemic alphabet to your students? Maybe, or maybe not. You'll need to think about your students—their age, their interests, their reasons for learning English, etc.—before making this decision. For some students it's helpful, but for others it's just confusing and scary.

The Articulatory System

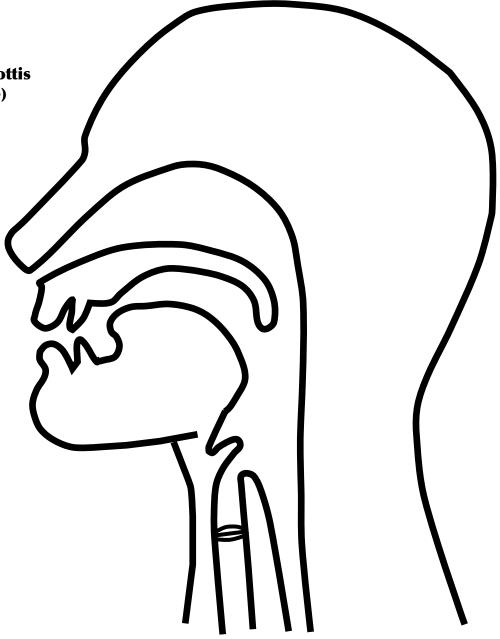
Label the following parts on the diagram.

- 1. Nasal passage
- 2. Alveolar ridge (tooth ridge)
- 3. Hard palate
- 4. Soft palate (velum)
- 5. Lips
- 6. Teeth
- 7. Tongue
- 8. Uvula
- 9. Jaw

10.Vocal cords and glottis

11.Trachea (wind pipe)

12.Pharynx



The Consonants of North American English and Their Phonemic Symbols (Based on the symbols used in *Teaching Pronunciation*)

Phonemic Symbol	Examples	Other symbols?	Phonemic Symbol	Examples	Other symbols?
/b/	<i>b</i> oy, ca <i>b</i>		/h /	his, ahead	
/p/	pie, lip		/d3/	joy, giant, budge	
/d/	dog, bed		/t ʃ /	cheek, watch, cello	
/t/	toe, cat		/m/	me, seem	
/g/	go, beg		/n/	no, sun	
/k/	cat, kit, back		/ŋ/	sing, singer, think	
/v/	view, love		/1/	long, full	
/f/	fill, phone, life		/r/	run, car	
/ð/	the, bathe		/w/	win, swim, away	
/0/	thin, bath		/y/	you, loyal	
/z/	zoo, buzz, goes		(/hw/)	(which, what)	
/s/	see, city, bus, thinks			(Most NAE speakers do not use /hw/ as a	
/3/	leisure, beige			separate phoneme.	
/ʃ/	shy, dish, special			They use /w/ instead.)	

How do consonant sounds differ from each other?

Voicing							
Voiced	The vocal cords are vibrating while saying the sound. Touch your throat to feel the vibration or plug your ears to hear it more loudly.	Examples:					
Voiceless	The vocal cords are not vibrating. When you touch your throat, you feel no vibration. When you plug your ears, the sound does not become louder.	Examples:					

	Points of Articulation					
Bilabial	Both lips come together.	Examples:				
Labiodental	Lower lip and upper teeth.	Examples:				
Dental (or Interdental)	Tongue tip and inner edge of upper teeth.	Examples:				
Alveolar	Tongue tip and alveolar ridge (tooth ridge).	Examples:				
Palatal (or Alveopalatal)	Body of tongue and hard palate.	Examples:				
Velar	Back of tongue and soft palate.	Examples:				
Glottal	Throat passage is constricted to produce friction.	Examples:				

	Manner of Articulation						
Stop	Air stream is blocked completely before it is releasedan explosion.	Examples:					
Fricative	Air stream is compressed and passes through a small opening, creating frictiona hissing.	Examples:					
Affricate	Combination of a stop followed by a fricativean explosion with a slow release.	Examples:					
Nasal	Air passes through the nose instead of the mouth.	Examples:					
Liquid	Air stream moves around the tongue in a relatively unobstructed manner.	Examples:					
Glide	Sound is very much like a vowel (a very quick vowel).	Examples:					

Review: Fill in the chart with consonant phoneme symbols:

	Classification of NAE Consonant Phonemes							
Manner of Articulation	Place of Articulation							
Articulation	Bilabial	Labiodental	Dental	Alveolar	Palatal	Velar	Glottal	
Stop Voiceless Voiced								
Fricative Voiceless Voiced								
Affricate Voiceless Voiced								
Nasal Voiced								
Liquid Voiced								
Glide Voiced								

The Effect of Environment on Consonants

Some consonants are pronounced differently, depending on where they are in a word and what sounds are around them. (That is, some consonant phonemes have more than one allophone, depending on their phonetic environment.)

Light and dark /l/: The consonant /l/ is often said to have two allophones: "light" or alveolar /l/ ([l]) and "dark," or velarized /l/ ([l]), occurring in different positions:

- [1]: at the beginning of a syllable and before front vowels
- [†]: at the end of a syllable and before back vowels

However, many Americans don't make this distinction. They pronounce a "dark" /l/ in all positions. Because of this, it's best not to be too concerned about the distinction between dark and light /l/.

Syllabic consonants: The consonants /n/ and /l/ can sometimes be a full syllable by themselves. This most often happens after a stressed syllable that ends in an alveolar consonant, especially /t/, /d/, and /n/.

Syllabic /n/	Syllabic /l/
kitten	kettle
button	little
didn't	ladle
shouldn't	tunnel

Allophones of Voiceless Stops in English (Changes in the Pronunciation of the Phonemes /p/, /t/, and /k/)

	p^h	When /p/ comes at the beginning of a word or a stressed syllable, it is pronounced with a puff of air. We say it is aspirated. **pot panic pretty appeal**
/p/	p	When /p/ comes after /s/, it doesn't have a puff of air. We say it is unaspirated. spot special spring
		When /p/ comes at the end of a word, we often don't pronounce it completely. Our lips come together, but they don't open. stop lip Philip

	th	When /t/ comes at the beginning of a word or a stressed syllable, it is pronounced with a puff of air. We say it is aspirated.
		top terrible train attend
	t	When /t/ comes after /s/, it doesn't have a puff of air. We say it is unaspirated. stop stylish string
/t/	t°	When /t/ comes at the end of a word, we often don't pronounce it completely. Our tongue blocks the air in our mouth, but it doesn't open afterwards. cat bought rabbit
	ſ	When /t/ comes between vowels, after a stressed syllable, it becomes voiced. It almost sounds like /d/. better little a lot of
		When /t/ comes before an unstressed syllable /ən/, it is often pronounced by pressing the vocal
	3	cords together, almost like the beginning of a cough. (We call this a glottal stop.) kitten mountain Martin
		When /t/ comes before /r/ in a stressed syllable, it can sound almost like /t \int /. It is pronounced
	tJ	with the tongue farther back and with the lips a little rounded, getting ready for the /r/ sound. *tree true intrigue*

	k ^h	When /k/ comes at the beginning of a word or a stressed syllable, it is pronounced with a puff of air. We say it is aspirated. cool kettle cream account
/k/	k	When /k/ comes after /s/, it doesn't have a puff of air. We say it is unaspirated. school sky scream
	k°	When /k/ comes at the end of a word, we often don't pronounce it completely. The back of the tongue comes up and blocks off the air coming through the mouth, but it doesn't open again. sick park remark

Consonant clusters are groups of two or more consonant sounds in a row.

<u>stop str</u>ong de<u>sk</u> de<u>sks</u> e<u>xpl</u>ain <u>clust</u>er

Consonant clusters can be difficult for learners from many language backgrounds. They often cope by:

- Simplifying the consonant clusters by omitting some sounds: desk \rightarrow /des/
- Adding extra vowels to separate the consonants: sport \rightarrow /suport/ or /esport/

These errors can cause problems in being understood.

Teaching Pronunciation: Chapter 4 "The Vowel System"

How do vowel sounds differ from each other?

- Simple vowels, glided vowels, and diphthongs: Is the sound constant throughout the vowel, or does it change a bit at the end?
 - If the tongue stays in the same position throughout the vowel, it's a simple vowel.
 - If the tongue position changes just a little, it's a glided vowel.
 - If the tongue position changes a lot, so it sounds like two separate vowel sounds blended together, it's a diphthong.
- **Tongue position:** Where is the highest, tensest, or most active part of the tongue?
 - Vertical position: high / mid / low
 - Horizontal position: front / central / back
- **Lip rounding:** Are the lips very rounded, somewhat rounded, relaxed, stretched wide?
- Tense and lax vowels: How tense or tight are the muscles of the tongue during the sound?



The Vowel Quadrant

The vowel quadrant is a way of representing the tongue position for vowels. Each section of the diagram shows a different tongue placement, vertically and horizontally.

In the vowel quadrant diagrams below, fill in the phonemic symbols for the English vowels and diphthongs.

	Vowels			Diphthongs	5
front	central	back	front	central	back
high			high		
mid			mid		
low			lov	w\	

The Vowels of North American English and Their Phonemic Symbols

(Based on the symbols used in *Teaching Pronunciation*)

Phonemic symbol	Examples Other symbols?		Phonemic symbol	Examples	Other symbols?
/iy/	beat, see, machine		/uw/	boot, blue, shoe	
/I/	bit, him		/ʊ/	book, full	
/ey/	bait, made, they		/ow/	boat, home, blow	
/٤/	bet, leg, head		/ɔ/	bought, saw	
/æ/	bat, has, apple		/a/	box, car, father	
/^/	but, mother		/ay/	bite, sight	
/ə/	sofa, until, combine		/aw/	about, cow	
			/oy/	boy, noise	

Vowel sounds are sometimes changed by the sounds around them.

sounds. They're longest of all when they come at the end of a word. Compare:

• Length: Vowels are usually shorter in duration before voiceless sounds and longer before voiced

	bed / bet	bead /	beat	man / mast	hill / hit
• /r/ (coloring: Son	ne vowe	l contras	ts are neutrali	zed before /r/. Look at these words:
	bead / bid /	beer	"Bead" /	biyd/ and "bio	d"/bid/ are separate words with different vowel sounds
	But we cou	ıld pronc	ounce "be	eer" either /bɪ	r/ or /biyr/ without changing its meaning.
	load / laud	/ lord	In the sai	ne way, "load	" /lowd/ and "laud" /lod/ have contrasting vowels, but
	with "lord,"	" we cou	ıld say /la	ord/ or /lowro	l/ without changing the meaning.

• /I/ co	loring: To a lesser exten	it, vowel	contrasts	before /l/	are also	sometimes weaker. Ex	kamples
	heal / hill / he'll	she'll	we'll	I'll	you'll	they'll	
• Nasa	l coloring: Vowels follo	wed by	a nasal soi	und also te	end to be	nasalized. Examples:	

can can't

- The contrast between the words "can" and "can't" is often especially troublesome.
 - "Can't" is usually stressed. It sounds like /kænt/ or /kæn?/, with a clear /æ/ sound.

 I can't go with you. Who can't afford a new car?
 - "Can" is usually unstressed. It often sounds like /kən/ or /kn/, with a reduced vowel. I can go with you. Who can afford a new car?
 - But when "can" is alone, with no verb after it, it's usually stressed. Yes, I can.

 I can tomorrow, but not right now.

seem

seen

sing

Vowel reduction

Vowel sounds are often changed (reduced) in unstressed syllables. They become less clear, and often turn to /ə/ (schwa). Only a small number of vowel sounds commonly occur in unstressed syllables.

/ə/	sofa aqua quota Sarah about around subtract offend (/ə/ is by far the most common vowel in unstressed syllables
/ər/	water mother curtail entertainment (This sound can be thought of as a combination of /ə/ and /r/)
/I/	music reddish sleeping
/i/	city pretty candy
/o/	meadow narrow shadow hotel rosette
/u/	into venue menu

Citation form: The way we pronounce a word when we're saying it very carefully is its citation form—the unreduced form. For example, the citation form of "to" is /tuw/.

Reduced form: The way we pronounce a word in normal speech, when it isn't being stressed, is tis reduced form. For example, the reduced form of "to" is /tə/.

(There's more about reduced forms and word stress in Chapter 5.)



Reduced Vowels

Teaching Pronunciation: Chapter 5 "Connected Speech, Stress, and Rhythm"

Segmental features: The individual sounds (phonemes) of a language—the vowels and

consonants.

Suprasegmental features: Aspects of pronunciation that affect more than one sound segment,

such as stress, intonation, and rhythm—the musical aspects of

pronunciation.

The musical aspects of pronunciation are very important. Some researchers even say that they are more important than the pronunciation of individual sounds. In the classroom, we need to help our students practice both individual sounds and the overall pattern of the language.

The Law of Economy: Your mouth is basically lazy. It wants to speak in the easiest way possible, so it blends all the sounds together.

On the other hand, listeners need to be able to hear the difference between different sounds, or they won't understand what you're saying. Your mouth can't be *too* lazy.

Our mouths have to find a balance when we speak: Comfortable, but not too lazy.



Important Suprasegmental Features of English:

Connected Speech

When people talk normally, their words blend together and change in predictable ways. This is not sloppy, uneducated, or bad. It's just normal. It happens when people speak casually, but also when they speak formally. In short, *all* speech is connected speech.

Here are some changes that happen in connected speech:

- **Contractions and blends:** Both of these are actually the same thing—a two-word sequence that blends together into one unit. If the two-word combination is not normally *written* as one word, we just call it a blend. But if the two-word combination has a special written form with an apostrophe, we call it a contraction:
 - is + not \rightarrow isn't I + am \rightarrow I'm that + will \rightarrow that'll there + would \rightarrow there'd



• **Linking:** In normal speech, words are not pronounced as separate, individual units. The last sound of one word is often linked to or blended with the first sound of the next word.

What sounds?	What happens?	Examples	
$/iy/ + V \rightarrow$ $/ey/ + V \rightarrow$ $/ay/ + V \rightarrow$ $/oy/ + V \rightarrow$	Add a /y/ glide between the words as a link to the following vowel.	I'll b <u>e a</u> ble to cr <u>ea</u> te m <u>y o</u> wn to <u>y a</u> irplane.	
$/uw/ + V \rightarrow$ Add a /w/ glide between the words as a link to the following vowel.		St <u>ua</u> rt is no <u>w i</u> n Ne <u>w O</u> rleans.	
VC + V →	Word-final consonant links to the following vowel.	That dog is black and white.	
VCC + V →	The last consonant in a cluster links to the following vowel.	I foun <u>d out that Bob broke his left arm.</u>	
C + C →	Two identical consonants blend into one longer consonant.	The doctors found a quick cure in a short time.	
$C_1 + C_2 \rightarrow$	A stop followed by a stop or affricate: The first stop is not released and the two blend.	My pe <u>t</u> cat is sitting by the blackboard.	

- **Assimilation:** Sometimes a sound becomes more similar to a sound that comes before or after it. This makes the words easier to pronounce. Every language has some kind of assimilation, although not all languages use assimilation in exactly the same way.
 - Progressive assimilation: The first sound causes the second sound to change.
 - -s and -ed endings: The endings are voiced after a voiced sound, voiceless after a voiceless sound. (See Chapter 11 for more details.)
 - Regressive assimilation: The second sound causes the first sound to change.
 - have to "hafta" has to "hasta" used to "usta"
 - good boy at peace pet kitten in pain in May in California in good health
 - Coalescent assimilation: Two sounds blend together to make a new sound.
 - **Palatalization:** Don't you think so? I'll miss you. Does your mother know? Is that your dog? Did you study? She needs your help.

- **Deletion:** In normal speech, a sound may disappear or not be clearly pronounced *in certain contexts*. (Not just anyplace—only in these environments.) This is also called "omission."
 - Loss of /t/: $V + nt + V \rightarrow VnV$ winter /winer/ Toronto /təranow/
 - Simplification of consonant clusters: In final clusters of three or four consonants, a *middle* consonant is sometimes dropped. (Never the first or last consonant.)
 - The desks sit side by side. five-sixths facts months /ss/ /ks/ /ks/ /ns/
 East side blind man old boyfriend /ss/ /nm/ /lb/
 - Sounds are deleted in some very common words and expressions:
 - going to \rightarrow gonna want to \rightarrow wanna should have \rightarrow shoulda
 - because \Rightarrow 'cause about \Rightarrow 'bout around \Rightarrow 'round
 - February → /febyuweriy/ governor → /qʌvənə^r/ surprise /səprayz/
 - Sometimes entire unstressed syllables are omitted (but only in particular words--not just anyplace.) This is called "syncope" by people who like big words.

 chocolate vegetable restaurant family
- **Epenthesis:** In very few cases, an extra syllable is added to make a word easier to pronounce. The most common example is when an extra vowel // is added before an -ed or -s word ending. There are more details about this in Chapter 11.
- **Word Stress:** The syllable in a word that is longer, louder, and higher in pitch than others. If a word has more than one syllable, one of them is stressed the most. It's very important to get the stress in the right place. Without correct stress, words may not be understood.
 - The syllables of a word may have one of three degrees of stress:
 - Strongly stressed (also called primary stress)
 - Lightly stressed (also called secondary stress)
 - Unstressed (also called tertiary stress)
 - Mark the primary and secondary stress (if any) in these words:

ten nis re li a ble pro nounce or gan i za tion re pre sen ta tive pro nun ci a tion



- There are rules that can often predict where the stress will fall in a word. They take into account the historical origin of a word, affixation, and the word's grammatical function in a sentence. They are rather complex, and it's *not* a good idea to try to teach all these details to students. Look at pages 185-198 in the textbook for more details about these rules.
- Sometimes a change in word stress indicates a change in the part of speech:

Noun	Verb	Noun	Verb
REcord	reCORD	PROgress	proGRESS
EXploit	exPLOIT	PREsent	preSENT
PERvert	perVERT	PERmit	perMIT

• Compound nouns are usually stressed on the first part of the compound.

BLACKbird OVERflow

- Compound verbs are usually stressed on the last part of the compound.
- Vowel sounds are often changed (reduced) in unstressed syllables. (See Chapter 4)
- It's important for unstressed syllables to be *much* weaker than stressed syllables. This helps the listener recognize the whole pattern of the word.

Sentence Stress: The syllable in a sentence or clause that receives the most emphasis or prominence.

- **Sentence stress** is often used to emphasize a word to emphasize it or to show that it is new information. (See Chapter 6 for more about prominence within a sentence.)
- **Content words:** Words that carry information. They have meaning in themselves.
- **Function words:** Words that show the grammatical relationships between other words, but don't have much meaning in themselves.
- In a sentence, content words tend to be stressed, and function words tend not to be stressed.

Content Words	Function Words
Nouns Main verbs Adjectives Possessive pronouns Demonstrative pronouns Interrogatives (question words) Not and negative contractions Adverbs Adverbial particles	Articles Auxiliary verbs Personal pronouns Possessive adjectives Demonstrative adjectives Prepositions conjunctions

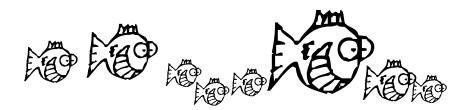
- When there's nothing special that needs to be emphasized, the last content word in a sentence is usually stressed. We'll learn more about sentence stress (prominence) in the next chapter.
- Mark the typical sentence stress in these examples:

Tom bought a bookshelf at Ikea.

What does he want to use it for?

He wants to keep his books in it.

- **Rhythm:** The regular, patterned beat of stressed and unstressed syllables and pauses in an utterance.
 - **English is a stress-timed language.** This means that the time between stressed syllables remains fairly steady, and extra syllables have to crowd in between the stressed syllables. Each syllable does *not* last the same length of time. English has a rhythm like this:



• Many other languages are syllable-timed. This means that each syllable takes about the same amount of time. These languages have a very regular rhythm, like this:



• Listen to the rhythm of these sentences. They all have three main stressed syllables and take about the same amount of time to say, even though some have many more syllables.

MICE	EAT	CHEESE.
The MICE	EAT	the CHEESE.
The MICE	will have EATen	the CHEESE.
The MICE	might have been EATing	the CHEESE.

• For the rhythm of English to sound natural, the pattern of stressed and unstressed syllables must be right.

All the things we've read about in this chapter work together to promote the regularity of English rhythm. Stressed syllables stand out. Unstressed syllables squeeze in between the stressed syllables, and sound changes make their articulation easier so that regular timing can be maintained. This produces the "music" of English.

Teaching Pronunciation: Chapter 6 "Prominence and Intonation in Discourse"

Thought group: When we speak, we break up long sentences into smaller thought groups, with a short pause between them. This makes it easier for listeners to follow what we're saying. The words of a thought group form a grammatical and semantic unit, but are not necessarily a whole sentence.

Intonation unit: A thought group that has its own intonation or pitch pattern. It is generally set off by pauses and contains one prominent element. The terms "thought group" and "intonation unit" are often used synonymously.

A thought group/intonation unit...

- has pauses before and after it. We pause between thought groups, but not usually within them.
- contains one prominent element. This is the word that receive the most emphasis in that group.
- has an intonation contour of its own. It has its own "melody."
- usually has a grammatically coherent internal structure—a phrase, a clause, a sentence, etc.

Prominence: Extra emphasis given to a word that a speaker wants to highlight. All the stressed syllables in an utterance receive some stress, but only one element in each thought group gets the big, main stress. Which syllable gets prominence?

• Prominence is usually given to new rather than old information.

What color car did you buy? I bought a **RED** one.

- If the speaker wants to emphasize something, that word can receive prominence. (Emphatic stress)

 No, I do **NOT** want to go on a date with you.
- A word that is in contrast to another element can be stressed. (Contrastive stress)

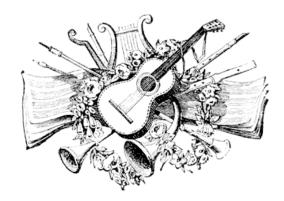
I didn't BUY a car. I only RENTed it.

Intonation: The pitch pattern of a sentence; the "melody" of your voice as you speak.

Every language has intonation. But each language has its own characteristic patterns for different kinds of sentences. We often don't notice the intonation of our own language because we're so used to it, but it's there.

Common intonation patterns in English

Intonation patterns in English depend on many things: the grammatical form of the sentence, the speaker's emotions, and assumptions about what the listener knows or does not know. English has more "ups and downs" in its intonation than many other languages, so it's sometimes difficult for students to get used to using natural sounding patterns. Some common intonation patterns are described in our book. However, in actual speech there is a great deal of variation.



Mark the typical intonation patterns in these sentences:

• **Statements** I really enjoy doing my homework.

• **Commands and requests** Please do your homework.

• **WH- questions** When did you do your homework?

Where are you going now?

How much homework do you have?

• **Yes/no questions** Have you finished your homework?

You've finished your homework already?

• **Repetition questions** (I went to xdshlekm) I'm sorry, *where* did you go?

• **Surprise** What? You've already finished your homework?

• "Or" questions Would you like some coffee or tea? (Choose one or the other.)

Would you like some coffee or tea? (The two are seen as a unit.)

Would you like some coffee....? Or tea....? (I can see that you didn't like the first suggestions, so I'm trying to think of something better.)

• **Tag questions** You like coffee, don't you? (I'm not sure what your answer will be.)

You like coffee, don't you? (I expect you to agree with me. I believe

you'll answer "yes.")

• **Lists** I came home, did my homework, and took a nap.

I like to read novels, biographies, newspapers,

and magazines.

• **Direct address** Mr. Smith, your limousine is ready.

Your limousine is ready, Mr. Smith.

• **Incomplete sentences** I'd like to have my own limousine, but.....

Now practice reading some of these sentences with different intonation patterns. What differences can you find in the meaning or feeling of the sentence when you change the intonation?



Some Ideas for Practicing Suprasegmental Features

Stress

- While saying words, stand up on stressed syllable, sit down on unstressed syllables.
- Stretch a thick rubber band to emphasize stressed syllables.
- Use large and small beads, beans, or glass blobs to represent stressed and unstressed syllables and form the syllable patterns of words.
- Write words on board with stressed syllable in larger letters.
- Seat students in a circle. Have them throw a ball to another student during a stressed syllable. Keep pronouncing the syllable until the other student catches the ball.
- Open eyes wider when saying stressed syllable.
- Step to the beat: Have students walk around the room, taking bigger steps on stressed syllables and shorter ones on unstressed syllables.

Rhythm

- Have students practice poems, chants, and rhymes, emphasizing rhythm.
- Clap, tap, or stomp your feet to show the rhythm.
- Use musical notation to indicate the longer and shorter syllables (if the students understand this).
- Play the rhythm on a xylophone, drum, or similar instrument.

Linking

- Write words on wood or plastic bars. Attach a magnet to one end of each one and a piece of steel to the other. Show how words "stick together," just like the magnets stick together. Velcro can also be used for this.
- Do a similar activity with words written on cards. Put cards next to each other to show linking.
- In written sentences, draw lines or circles to connect linked sounds and draw attention to them.
- Use balls of plasticine clay to represent words. While saying a sentence or phrase, mash balls together when syllables link.
- Write words in large letters on transparent plastic in different colors. Overlap edges of words to show how the sounds blend, just as the colors blend. (This is especially good for assibilation.)

Thought groups/intonation units

- Mark up a story, dialog, or paragraph to show thought groups, then read aloud.
- Give each student a red card and a yellow card. As they read a story or dialog, have them hold up the yellow card to show a partial pause and a red card to show a complete stop.
- Wave hands to show thought groups--up at beginning of group, down at end.

Prominence

- Use methods similar to those used for word stress to draw attention to prominent syllables.
- Use information gap activities, such as "Find the Difference," to practice contrastive stress.
- One student reads a list of false statements; a partner corrects them, using appropriate contrastive stress. ("Sydney is in Austria." "No, it's not in AUStria; it's in AuSTRALia.")

Intonation

- Mark intonation patterns over words in written dialog, then practice.
- Be a "conductor." Use your hands or a stick as a baton to show intonation.
- Play a kazoo, hum or sing to indicate intonation patterns.
- Hum a conversation. Have students guess the meaning or identify questions and answers.
- Have students practice and act out a short scene, using appropriate intonation patterns.

Teaching Pronunciation: Chapter 7 "Pronunciation in the Language Curriculum"

Accent addition: Instead of thinking of pronunciation practice as a way of getting rid of something undesirable, we can think of it as a way to add a new accent—a new skill that the learner can use when and if he/she wants to.

Setting realistic goals: It's almost impossible for a learner to sound exactly like a native speaker, and many learners don't need or want to do that. Instead, we can think of these concepts:

Intelligibility and comprehensibility: Although some researchers define these two terms slightly differently, they both refer to being easy to understand, without an accent that distracts or causes problems for listeners.

Communicability: How well someone can function and communicate in real-life situations.

Accentedness: Whether listeners feel that a speaker has "an accent" or not. Even if someone's English is considered to be accented, they may still be easy to understand.

A person's accent is strongly connected to their personal identity, and can represent membership in a group. Sometimes people feel like they want to keep their accent—it's in important part of themselves.

Assessing your teaching situation

We need to consider many factors when we teach:

• The setting:

- EFL (English as a Foreign Language, taught in a country where English isn't commonly spoken)
- ESL (English as a Second Language, taught in a country where English is the main language)
- EIL (English as an International Language, designed for learners who will need to communicate with people from many different backgrounds, both native and non-native speakers.)

• The learners:

- Age: Children and adults learn differently.
- Proficiency: Beginners and more advanced learners require different approaches.
- Previous exposure to the L2: The more exposure, the easier it can be to learn pronunciation.
- Motivation: People learn better if they want to learn.
- Identity: If learners feel that changing their pronunciation would make them lose who they are, they'll be reluctant to change.



- The learner's L1: Different views of the effect of the learner's L1 on learning a new language:
 - Contrastive analysis: Compare the sound systems of L1 and L2 to determine what needs to be taught. Sounds that are different can cause more problems and need more teaching time. (The focus is on sounds.)
 - Functional load: Some sound contrasts occur in many pairs of words, but others are not very common. We should determine how often a confusion of two sounds would cause problems before deciding which ones are most important to teach.
 - Distinctive feature analysis: Which features are different in the two languages? We should concentrate on these differences. (The focus is on features that might affect many different sounds, such as voicing, aspiration, or nasalization, rather than on single sounds.)
- The learner's speaking needs: When and where will he/she need to speak?

• The teaching context:

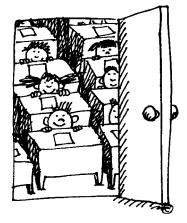
- Teacher preparation: There's a big variation in the amount and type of training teachers receive in teaching pronunciation. Many receive no training at all. (Gasp!)
- National language policy: Government decisions affect what must be taught and for how long.
- Curriculum and materials: Teachers often need to use curriculum and textbooks chosen by a national ministry of education or local school board.
- Availability of instructional resources: If you don't have certain equipment or materials, you won't be able to use it.
- Class size and time allotment: In large classes or with fewer teaching hours, it's hard to find time to teach pronunciation effectively.

Defining a core curriculum, or how not to teach everything

We can't teach everything, and it's ridiculous to try. We need to think about our priorities and the needs of our students before we choose what aspects of pronunciation to teach. Be realistic and choose the most important things to emphasize.

Designing pronunciation instruction for a specific group of learners

- Find out who your learners are and what they need.
- Find language that is relevant to your learners to use as practice material.
- Use these samples of authentic language to illustrate and practice specific pronunciation features.
- Provide frequent and sustained choral repetition with body movement.
- Give learners a chance to practice similar language in less-controlled activities.



Teaching Pronunciation: Chapter 8 "Testing and Evaluation"

- Pronunciation can be evaluated either holistically (by assigning a single, overall rating) or analytically (by rating the learner's control of individual features).
- Many teaching techniques can be adapted to become methods of evaluation.
- Students do better on tests with which they are familiar.
- Types of pronunciation evaluation:
 - **Diagnostic evaluation:** Used for screening and placement. Can test both listening discrimination and production.
 - Formal oral-proficiency testing instruments: Standardized tests that generally evaluate overall speaking proficiency. (iBT TOEFL, IELTS, etc.)
 - Ongoing evaluation with feedback: Self-monitoring and correction, peer feedback, and teacher feedback and correction.
 - Classroom testing: Tests of perception and/or production based on what has been learned in class.

Teaching Pronunciation: Chapter 9 "Techniques, Tools, and Technology"

In teaching pronunciation, we need to do more than simply teach rules and use mechanical drills. We need to emphasize the musical aspects of pronunciation in addition to individual sounds. We also need to use authentic materials and a wide range of techniques. We should try to achieve a balance between segmentals and suprasegmentals and between repetition and communicative activities.

Techniques

Techniques for teaching pronunciation can come from other fields, such as psychology, neurolinguistics, and theater arts. Here are some examples.

- **Breathing and relaxation techniques** such as guided-imagery activities can help students relax so that their pronunciation can become more natural.
- Fluency-building techniques are helpful in addition to accuracy-building techniques. These may seem to be "just speaking activities," but they give students the practice they need in pronouncing sounds and sentences beyond very structured activities.
- **Multisensory reinforcement techniques** help students understand how sounds should be pronounced and help them relax and improve their pronunciation.
 - Visual: Pictures, models, charts, diagrams, color coding, watching the teacher
 - Auditory: "Listen and repeat," mnemonic devices, memory pegs
 - Tactile: Rubber bands, feathers, straws, kazoos, touching the throat
 - **Kinesthetic:** Hand signals, body movements, waving, using hands as a model of the mouth, "conducting an orchestra"
- **Neurolinguistic programming** combines relaxation and multisensory techniques to increase learners' awareness of their pronunciation and then to change it in positive ways.
- **Drama techniques:** Voice exercises used by actors, as well as skits, role plays, improvisations, and simulations, can be useful in getting students to try out new pronunciation habits in a relaxed atmosphere.
- Imitation techniques: In shadowing and mirroring, students mimic a recording, such as a video clip, trying to speak in exactly the same way as the actors. Page 343 gives a suggestion for using a video clip from a movie or TV program for pronunciation practice using a dramatic imitative approach.

Tools

Tools for teaching pronunciation include physical objects, written materials for practice, games, and songs. These appeal to students' senses and are also fun.

• **Gadgets and props:** Mirrors, rubber bands, popsicles sticks, straws, rods, glass blobs, giant teeth, and many other objects can help demonstrate pronunciation in a memorable way.

- Cartoons: Carefully chosen cartoons can illustrate normal, casual speech in a fun way.
- Games: Games that require students to speak freely give them practice in pronouncing words fluently.
- Poetry, rhymes, jazz chants, and songs: All of these provide authentic material for pronunciation practice in a fun and relaxing way.
- Other authentic materials, such as advertisements, excerpts from story books and literature, restaurant menus, and magazines, are also useful in teaching pronunciation.

Technology

This is an area that is changing so fast that it's hard to keep up.

• Audio:

- For listening: CDs, MP3s, streaming audio from the Internet, and other recordings provide useful pronunciation models.
- For recording: Students can record their own voices using Audacity or other sound-recording computer software, then listen to the recordings for self-monitoring.
- With websites such as voicethread.com and voxopop.com (not mentioned in the textbook), teachers can set up a site where learners can record their voices and store the recordings for others to listen to.

• Video

- For viewing: DVDs, video podcasts, and streaming video from the Internet (youtube.com, etc.) provide useful pronunciation models.
- For recording: Video cameras are becoming cheaper all the time. Small pocket-sized video cameras such as the Flip Ultra, Kodak Zi8, and an increasing number of models from other companies allow teachers to make videos of their students as they speak. Cell phones and even some iPods can make simple videos.
- Voicethread also allows users to record video comments, if their computer has a camera.

• Pronunciation software and the Internet

Both of these can provide great materials for practicing pronunciation, but BE CAREFUL! Not all
materials are of good quality. Some are amateurish and inaccurate. Check and judge materials
carefully before you have students use them. If in doubt, use something else.

Look at http://teachingpronunciation.pbworks.com for links to more Internet resources for teaching pronunciation.

Teaching Pronunciation: Chapter 10 "Pronunciation and Listening"

Pronunciation and listening are closely linked. If learners cannot perceive the difference between sounds, or if they cannot recognize the intonation contours of a language and understand what they mean, their listening comprehension will be very weak.

Listening is complicated. Listeners don't just passively receive sounds and absorb their meaning. Listening is an active process as our brains try to construct meaning from what we hear: individual sounds, stress, intonation, prominence, etc.

Bottom-up processing: We listen to individual sounds to decode the meaning of what we hear.

Top-down processing: We listen for the overall meaning of what we hear, using our background knowledge of the topic to create expectations about what it must all mean.

How do listeners process and understand the speech that they hear?

"Listeners balance the multiple complex processes of comprehension by holding an evolving chunk of speech in short-term memory. As that fleeting chunk is held, we note stressed syllable, try to identify word boundaries, construct a *metrical template*—a distinctive pattern of stressed and unstressed syllables—and use pauses, linking, and intonation to group words together into meaningful chunks. Meanwhile, we are simultaneously testing out plausible interpretations by using context and background knowledge, that is, our top-down skills, to come with a phrase—with appropriate grammar and meaning—that is compatible with the incoming data." (page 367)

Why is this important?

This research indicates that stress and intonation patterns are the *first things* listeners pay attention to, even though they're not aware of it. They are not just minor afterthoughts. In order for our students to be understood easily, it is *essential* for them to be able to produce stress and intonation patterns accurately.

Mishearings and errors in dictations can tell us a lot about how people process and interpret what they hear. They give us insight into how students are understanding and representing the sounds in their minds.



To understand English easily, students must be able to:

- 1. Recognize intonation units
- 2. Recognize where the stress is
- 3. Interpret unstressed elements
- 4. Figure out the full forms that the reduced elements represent

Pauses and intonation contours: In writing, we can use punctuation to locate borders between parts of a sentence. In speaking, of course, there is no punctuation. Instead, we must pay attention to pauses and intonation contours. Notice the difference in the intonation patterns of these sentences:

• "Bob," said the boss, "is stupid." Bob said, "The boss is stupid."

• Let's eat, Stu. Let's eat stew.

Segmentation: It's sometimes difficult to know where to divide a stream of words.

• a tax on city buses attacks on city buses

• Paula praised Paul appraised

• Is Ann around? Is Anna round?

Miss Durant Mister Ant

Integrating pronunciation into a listening lesson

- •When you're doing listening practice, pay attention to ways that you can include pronunciation practice in the lesson. Here are some ideas:
- •When students learn new vocabulary words or phrases, be sure to help students by:
 - Practicing the stress patterns.
 - Practicing the sounds of the stressed vowels.
 - Modeling the pronunciation of the words, by saying them or by playing a recording.
 - Having learners chorally repeat the new words or phrases many times in context.
- •When students are listening to a recorded lecture, story, etc., ask them to listen for pauses and prominence. Have them listen for signal words and phrases (transition words) that show the organization of the material and practice repeating them.
- •Ask students to pay attention to the pauses, prominence, and intonation that occur in conversations.
- •Before listening to an exercise or passage:
 - Present students with pronunciation information about what they are going to hear.
 - Have students repeat important phrases, not just listen.



Teaching Pronunciation: Chapter 11 "The Sound System and Morphology"

Morphology: The study of how words are made up of smaller parts—how word roots, prefixes and suffixes are put together to make words, and how these forms are connected to the whole grammar of the language. Morphology includes:

Inflectional morphology: Adding grammatical endings to words to make a different form of the same word. (For example, work $+ \text{ ing } \rightarrow \text{ working}$, happy $+ \text{ er } \rightarrow \text{ happier}$, class $+ \text{ es } \rightarrow \text{ classes}$)

Derivational morphology: Putting word parts together (roots, prefixes, suffixes) to make new words. (For example, work + er \rightarrow worker, un + happy \rightarrow unhappy, class + room \rightarrow classroom)

Some aspects of English morphology are closely related to pronunciation:

• The -s inflectional ending (in plural nouns, possessives, or the third person singular of present tense verbs). Its pronunciation depends on the sound that comes before it.

If the word ends in one of these sounds	Pronunciation of -s ending	Examples
/s/, /z/, /ʃ/, /ʒ/, /tʃ/, /dʒ/	/əz/ or /ɪz/	kisses, roses, bushes, catches, boxes, judge's, Dr. Leech's
Any voiced sound besides those listed above	/z/	boys, bags, sees, runs, heads, Marvin's, Betty's
Any voiceless sound besides those listed above	/s/	boats, lakes, cuffs, hits, taps, Mike's, Pat's, Mr. White's

• The -ed inflectional ending (the regular past tense). Its pronunciation also depends on the sound that comes before it.

If the word ends in one of these sounds	Pronunciation of -ed ending	Examples
/t/, /d/	/əd/ or /ɪd/	chatted, waded, waited, added, needed
Any voiced sound besides those listed above	/d/	cried, grabbed, moved, viewed, robbed, buzzed, judged
Any voiceless sound besides those listed above	/t/	walked, passed, kissed, laughed, stopped, whipped, matched, washed

• **Other endings** may also have different pronunciation forms. However, these vary depending on the degree of formality or informality and the speed of speech. They are not definite phonological rules like those listed above. For example:

Word	In careful speech	In ordinary, rapid speech	
helping	/hɛlpɪŋ/	/hɛlpɪn/	
renting	/rɛntɪŋ/	/rɛ̃nʔn/ or /rɛ̃ʔn/	

Note about irregular noun and verb forms:

The textbook gives lots of details about different categories of irregular forms and tells how they came about (pages 406-410). However, it is *not* necessary to remember all these details or to tell them to your students. That would absolutely result in information overload, even for very motivated adult students. Pointing out that certain verbs follow the same patterns is certainly helpful (drink/drank/drunk, sink/sank/sunk, etc.), but in my opinion, there's nothing to be gained by telling students about "irregular weak verbs" and "irregular strong verbs." If you ever want to know these details for some reason, look them up again in the book. That's why we have books—so you don't have to carry *everything* around in your head.

Part-of-speech alternations

Some pairs of words have sound patterns that signal what part of speech they are. For example:

Voicing of the final sound (voiceless for nouns, voiced for verbs. Sometimes there's also a vowel sound change): For example, "use" /yus/ is a noun, but "use" /yuz/ is a verb. "Bath" /bæ θ / is a noun, but "bathe" /beyð/ is a verb. "Life" /layf/ is a noun, but "live" /lɪv/ is a verb.

Verbs and adjectives ending in -ed: For some word pairs, the verb form is pronounced according to the regular rules discussed earlier ("blessed" /blest/, "learned" /lsrnd/, "beloved" /biylavd/), but the related adjective is always pronounced with /d/ ("blessed" /blesid/, "learned" /lsrnid/, "beloved" /biylavid/). This only works for a very limited group of words—not all verb/adjective pairs. For example, "tired," "excited," and "surprised" are pronounced the same whether they're verbs are adjectives.

Words ending in -ate: Many words in -ate can be verbs or adjectives/nouns, with a change in pronunciation of the ending. For verbs, it's /eyt/, but for nouns or adjectives it's /ət/: "Duplicate" as a verb: /duwplrkeyt/, but "duplicate" as a noun or adjective: /duwplrkət/.

Change of word stress: Sometimes a change in word stress indicates a change in the part of speech—stress on the first syllable for a noun, stress on the second syllable for a verb. (See Chapter 5).

How do we pronounce these endings?

Write the words in the correct columns to show how their endings are pronounced.

-s	Verbs (Ad	d -s to make the	e third person	singular, preser	nt tense.)		
	like listen	wash study	judge live	walk dance	buzz look		
	Nouns (A	dd -s to make th	ne plural form	or -'s to make	the possessive.)		
	book church	chair envelope	badge word	chicken car	elephant letter		
	/s/	/		/ z /		/əz/	
-ed	Verbs (Ad	d -ed to make tl	he regular pas	st tense or past p	participle.)		
	like listen	wash study	judge live	load dance	buzz look		
	chat	touch	need	walk	hate		
	/t/	,		/d/		/əd/	

Teaching Pronunciation: Chapter 12 "The Sound System and Spelling"

Grapheme: A single written letter.

Digraph: Two letters that together represent one sound. There are **vowel digraphs**, like "ee" to spell / iy/ or "ai" to spell /ey/, and **consonant digraphs**, like "ph" to spell /f/ or "th" to spell / θ / or / δ /.

- English spelling has an indirect and somewhat complex relationship with pronunciation. There is a regular, though sometimes complicated, correspondence between the spelling and sounds of many English words.
- The spelling of many words depends on the morphology of the word more than on its pronunciation. A word root may have the same spelling in two words, even though the pronunciation is different.

reduce /riyduws/ reduction /riydaksən/
 verbose /varbows/ verbosity /varbasəriy/
 sane /seyn/ sanity /sænəriy/

One letter does not always correspond to one phoneme.					
	Examples				
Spelling Situation	Spelling(s)	Sound(s)			
One sound, more than one possible spelling	-fphgh- (cough)	/f/			
One spelling, more than one possible sound	-c-	/k/ (cat), /s/ (city)			
Two letters together represent one sound (a digraph)	-sh-	/ʃ/			
One letter represents a two-sound combination	-X-	/ks/			
A letter represents no sound (a "silent letter")	-k- (know) -gh- (night)	no sound			

"Invisible /y/": Sometimes the sound /uw/, spelled "u," "eu," or "ew," has a /y/ sound before it. This is called "Invisible /y/" because the /y/ is not represented in spelling. Invisible /y/ isn't found after the letters j, r, or ch. It is seldom found after t, d, s, z, n, and l in NAE, although some people pronounce it in words like "Tuesday" and "new."

Silent letters: Many "silent letters" in English are there because they used to represent a sound, but that sound stopped being pronounced. (We could call them "ghost letters"—Doesn't that sound dramatic? They're all that's left of a sound that's "died." We can still see them, but they're not really there.)

Many more spelling rules are described in our textbook. It's best to look there if you want more details.