

# *Pronunciation Fundamentals*

## Supplementary materials

### Chapter One

#### Further reading and discussion

1. For an accessible overview of the terms and concepts covered in this chapter, read Derwing & Munro (2009), a written version of a plenary talk we delivered to the American Association for Applied Linguistics (AAAL) in 2008.
2. Produce the following utterance pairs aloud to a partner and discuss how they differ phonetically. How do you account for the intelligibility breakdowns described at the beginning of this chapter?

Descend two four zero zero.      Descend to four zero zero.  
Cleared two seven.                  Cleared to seven.

### Chapter Two

#### Further reading and discussion

1. Locate information about the writing systems used in the following languages, and classify each as *alphabetic*, *syllabic* or *logographic*. Discuss the kinds of challenges that might be experienced by speakers of these languages in learning English sound-to-spelling correspondences.

Dutch  
Spanish  
Russian  
Korean  
Japanese  
Mandarin  
Arabic  
Hindi

2. Obtain copies of one or more of the following old pronunciation texts from a library. Look for the earliest available editions. Analyze the assumptions they make about pronunciation learning in terms of goals, issues to be covered, and types of exercises recommended. What similarities and differences can you see amongst their approaches?

Prator, C.H. (1951) *Manual of American English pronunciation for adult foreign students*. New York: Rinehart.

English Language Services Inc. (1966, 1967). *Drills and exercises in English pronunciation* (3 volumes). New York: Collier MacMillan International.

Kenworthy, J. (1987). *Teaching English pronunciation*. New York: Longman.

Nilsen, D.L. F., & Nilsen, A.P. (1971). *Pronunciation contrasts in English*. New York: Simon and Schuster.

3. Examine the tables of contents of old issues of L2 research journals such as *Language Learning* from the 1960s to the 1980s. Identify and report on at least two pronunciation studies that you have not previously heard about.

## Chapter Three

### Further reading and discussion

1. Flege, Takagi, and Mann (1995) reported a study in which Japanese speakers' productions of English /ɪ/ were evaluated. They found that "very experienced" speakers, who had lived in the USA for many years produced native-like /ɪ/. About a decade later, Larson-Hall (2006) carried out a replication study of speakers who were similar to Flege et al.'s with respect to AOL and LOR. Her outcome was quite different, yielding no significant LOR effect. Read these two studies and compare them with respect to methodological details, data analysis techniques, and interpretations of the findings. Discuss the possible reasons for the difference in outcomes.
2. Compare the studies in Table 3.1 with respect to methodological details. Consider the types of speech samples collected, the distributions of AOL, and the instruments used for testing.
3. Imagine the following scenario: You are at a party where you meet someone who hears about your interest in applied linguistics and asks for your opinions on foreign accents. You mention that research has largely confirmed that older L2 learners typically end up with stronger foreign accents than younger learners. Your interlocutor then interrupts and tells you that she doesn't believe you. She says that her friend's brother moved to Toronto five years ago at the age of 19 without

speaking a word of English and now has not even a trace of an accent. How do you respond?

4. It might be argued that the question of whether a critical period accounts for adult difficulties in L2 pronunciation learning is largely irrelevant to language teachers. What points might be raised in favour of and against such a view?
5. In this book, we take the view that empirical research can guide us in the development of good teaching practices. However, a consideration of the impact of the Purcell and Suter study might suggest that empirical research has actually caused us a lot of trouble in the past. Compare the risks and advantages of applying research outcomes in the classroom. How can we minimize the former and exploit the latter?
6. Fill in the following chart by ranking the strength of each effect as small, moderate, large, or unknown. For each entry, provide one or two citations of research studies that support your conclusion. Feel free to add more factors to the list.

Factor	Effect	
	Accent	Intelligibility
Age		
Experience		
Aptitude		
Instruction		
Welcoming nature of the L2 community		

7. Derwing, Munro, and Thomson (2008) studied immigrants who had arrived in Canada as adults and who had had limited exposure to spoken English in their previous language studies. Most of their progress in pronunciation occurred during their first year of residence in Canada. Would you expect EFL learners with extensive interaction experience (perhaps via Skype, or Second Life) to also exhibit noticeable improvements on oral language dimensions such as comprehensibility, fluency, and accent within a year of immigrating to an English-speaking context? Explain your response.

## Chapter Four

### Further reading and discussion

1. List as many minimal pairs distinguished by /i/ – /ɪ/ as you can. Now do the same for /u/ – /ʊ/. Using the criteria in Table 4.5, comment on the relative functional loads of these pairs.

2. Skim Lombardi's (2003) article on L2 speakers' substitutions for English interdentals to grasp the main issue she addresses in her paper. Lombardi, L. (2003). Second language data and constraints on Manner: Explaining substitutions for the English interdentals. *Second Language Research*, 19 (3), 225–250. You do not need to understand her OT analysis; instead focus on the sources of information she uses to describe L2 speech. What data does she present in support of her argument.

## Chapter Five

### Further reading and discussion

1. Choose one of the following textbooks and examine it for pedagogical goals, focus of attention:

Gilbert, J.B. (2012). *Clear speech: Pronunciation and listening comprehension in North American English* (4th ed.). New York, NY: Cambridge University Press.

Grant, L. (2010). *Well said: Advanced English pronunciation* (3rd ed.). Boston, MA: Heinle & Heinle.

Hewings, M. (2004). *Pronunciation practice activities: A resource book for teaching English pronunciation*. Cambridge, UK: Cambridge University Press.

Nilsen, D.L. F., & Nilsen, A.P. (2010). *Pronunciation contrasts in English*. Long Grove, IL: Waveland Press.

2. Compare two general skills textbooks to see whether they incorporate pronunciation, and if so, can you think of a better way to do it? Do the books incorporate review of pronunciation points?
3. Is there a 'gang effect' of pronunciation variables? For example, what happens when there is a single form that is both ungrammatical and has nonnative stress? Will that form cause more problems for intelligibility than either feature will cause separately? How could a researcher address this issue? Outline a study that would answer this question.

## Chapter Six

### Further reading and discussion

1. Compare the assessment rubrics in Celce-Murcia et al. (2010). What do you see as the strengths and weaknesses of each?

2. Some researchers, teachers and learners have asked which matters more: prosody or segmentals? Do you see this as a good question? Why or why not?
3. Visit the automated pronunciation test websites for Versant ([www.versant-test.com](http://www.versant-test.com)) and Phonologics ([www.phonologics.com](http://www.phonologics.com)). How are these tests marketed, who are they designed for, and what kinds of assessment do they claim to perform?
4. For a detailed discussion and critique of pronunciation assessment, read Isaacs (2014) and look closely at the challenges she identifies near the end of the chapter. Which of these would be easiest to address? Why?

## Chapter Seven

### Further reading and discussion

1. Read Mary Grantham O'Brien's article listed here and consider her suggestions for action research. If your class has the time, carry out #3.

O'Brien, M.G. (2011). Teaching and assessing pronunciation with computer technology. In N. Arnold & L. Ducate (Eds.), *Present and future promises of CALL: From theory and research to new directions in language teaching* (pp. 375–406). San Marcos, TX: Computer-assisted Language Instruction Consortium.

2. What is your fantasy scenario for learning pronunciation through technology? Discuss this with your peers and compare your responses.

## Chapter Eight

### Further reading and discussion

1. "Accents" is a short public service announcement about housing discrimination. It was jointly produced by the Ad Council, HUD, and the Leadership Conference on Civil Rights Education Fund. Watch this video on YouTube (<http://www.youtube.com/watch?v=84k2iM30vbY>) and discuss any instances of accent discrimination with which you are familiar.
2. Visit [Humanaccents.com](http://Humanaccents.com) and read about the Linguistic Tolerance Project. Discuss what *you* can do to promote acceptance of accents.
3. Read the LADO guidelines developed by the Language and Asylum Research Group (<http://www.essex.ac.uk/larg/resources/guidelines.aspx>) and discuss the reasons for the restrictions that have been proposed.

4. Ask yourself whether it matters if a language teacher speaks the local dialect. What would you look for in a language teacher?

## Chapter Nine

### Further reading and discussion

1. Enter “accent reduction program” into a search engine. Find five programs that make claims that have not been substantiated by research. Present these claims to the class.
2. Go to Joanna Tam’s website and watch her two videos. Pay particular attention to the coach’s interactions with her in the Accent Reduction video. Does she answer Joanna’s questions? Does she explain what she wants Joanna to do clearly?
3. In the Ping Pong video on Joanna’s site, what does the ping-pong metaphor represent?

### Extended glossary

**absence:** See deletion.

**accent:** Aspects of pronunciation that distinguish members of different speech communities, often the result of regional, ethnic and class differences. Foreign accents are the result of L1 influence on the L2.

**accent elimination:** See accent reduction.

**accent modification:** A term used by speech language pathologists to refer to the process of changing L2 speakers’ pronunciation.

**accent reduction:** Instruction designed to eliminate some or all aspects of an L2 accent rather than just those that interfere with intelligibility.

**accentedness:** The amount of difference perceived by speakers of one linguistic variety when listening to speakers of other varieties.

**acoustic measurement:** Measurements of the properties of sound, including frequency (pitch), amplitude (volume), and duration (time).

**African American Vernacular English (AAVE):** A dialect of English spoken primarily in America and most commonly, though not exclusively, by African Americans; other terms used are *Ebonics* and *Black English*.

**allophone:** A sound which is phonetically distinct from other sounds, but which patterns together with other allophones within a single phoneme. For example, the aspirated [p<sup>h</sup>] in /pɪt/ and unaspirated [p] in /spɪt/ are distinct allophones, but are both perceived as the phoneme /p/ in English.

**alphabetic:** A type of writing system that uses phonemes as a basis for symbols, e.g. English, Russian.

**alveolar:** A place of articulation involving the tongue tip and the alveolar ridge as in [t], [d], [s], [z], and [l]. The alveolar ridge is directly behind the top teeth.

**analog recording equipment:** Recording devices that record sound directly and continual rather than converting it to a set of numeric codes (see digital).

**aptitude:** Second language learning ability or talent.

**aspiration:** A phonetic feature involving the release of a puff of air. In English, /p/, /t/, and /k/ are always aspirated in initial position in a stressed syllable.

**assimilation:** The process of perceptually matching a sound segment from the L2 to a similar sound in the L1. This can make it difficult for L2 listeners to accurately perceive L2 sounds.

**asylum seekers:** Refugee claimants who have fled their countries of origin in search of a safe country, usually for political reasons.

**Audiolingual Method:** A language teaching method, based on behavioural psychology, which emphasizes oral/aural skills, requiring learners to listen to native speaker models and imitate them as closely as possible. With respect to pronunciation ALM adheres to the nativeness principle.

**automatic speech recognition (ASR):** Technology in which computers determine the content of human speech, often by converting spoken words into textual form.

**bilabial:** A place of articulation involving both lips. In English, /b/, /p/, and /m/ are all bilabials.

**click:** A category of consonants found in some southern African languages such as

Xhosa. Click sounds may be used non-linguistically to express dismay by saying *tsk tsk* or to urge a horse to move.

**co-articulation:** A tendency for the production of speech sounds to be affected by the articulatory properties of other nearby sounds.

**coda:** The final component of a syllable. The coda comprises all post-nuclear segments. In /let/ (*let*), /t/ is the coda; however, in /mi/ (*me*), no coda is present.

**Communicative Language Teaching (CLT):** A language teaching approach that became dominant in the 1980s. Its core principle is to focus on authentic communication rather than mastery of language forms and structure. The move away from focus-on-form led to a decrease in emphasis on pronunciation in CLT classrooms.

**comprehensibility:** The degree of effort required by a listener to understand an utterance.

**computer-assisted pronunciation training (CAPT):** Broadly, the use of computers to teach pronunciation; however CAPT is most often understood as the application of ASR to provide pronunciation feedback to learners. (See automatic speech recognition.)

**content words:** Generally, nouns, verbs, adjectives, adverbs, gerunds. These words tend to receive more stress than function words in English. (See function words.)

**consonant:** A segment in which the articulators impede the flow of air somewhere along the vocal tract. E.g., [p], [d], [s], [dʒ], [k], and [ʔ].

**consonant cluster:** Two or more consonants that appear in a word together with

no vowels separating them; for example, in 'street' /strit/, /str/ is a consonant cluster.

**construct validity:** The degree to which a test measures what it is supposed measure. For example, a written pronunciation test may lack construct validity because it is likely to provide a poor assessment of oral skills.

**contrastive analysis hypothesis (CAH):** A proposal that errors in the L2 can be predicted by comparing the phonological inventories of the L1 and the target language.

**contrastive stress:** A stressed word or phrase that emphasizes a contrast. For instance, a speaker may say, "Could you pass the RED book?" to emphasize that it is not the BLUE book that is needed. See stress.

**corrective feedback:** "An indication to a learner that his or her use of the target language is incorrect. Corrective feedback can be explicit or implicit, and may or may not include metalinguistic information." Lightbown & Spada, 2006, p. 197.

**correlational research:** Research that examines the relationship between two variables of interest (e.g. between the extent of contact in an L2 and the degree of comprehensibility). Correlational studies cannot be used to establish causal relationships.

**critical period:** A hypothesized period of life during which acquisition of a particular skill or behavior is optimal.

**deletion (or absence or omission):** Non-production of a segment or combination of segments from a target form.

**dental:** A place of articulation involving the teeth and the tip of the tongue. For example, in English, [ð] and [θ] are both dentals pro-

duced by positioning the tongue slightly between the upper and lower teeth. In Romance languages such as French, Spanish and Italian, /t/ is produced by placing the tongue directly behind the upper teeth.

**dependent variable:** A variable in a research experiment that shows the effects of another variable (independent variable). For example, in an experiment examining the effect of instruction on eliminating epenthesis, occurrence of epenthesis would be the dependent variable and pronunciation instruction would be the independent variable.

**devoicing:** Production of a typically voiced segment without voicing. This can occur as a systematic process in a language, or, in individual speakers, as a result of L1 influence on the L2.

**digital recording:** A form of technology in which audio material is translated into a numeric code and stored in numeric form rather than its original format. Digital technology is often contrasted with analog technology. (See analog recording equipment.)

**discrimination:** The ability to perceive the difference between two sounds or two longer utterances (e.g. recognizing that /l/ and /ɹ/ are different sounds or hearing the difference between *I can go* and *I can't go*).

**distortion:** Production of a speech segment in a noticeably non-target manner at the sub-phonemic level.

**empirical research:** Research based on deliberate first-hand observation and experience rather than theories, opinions, anecdotes, or beliefs. Often carried out through experiments, quasi-experiments, surveys, case studies, and systematic interviews.

**epenthesis (or insertion):** The insertion of a segment not normally present in the target form. For example, Japanese learners of English often insert vowels to break up consonant clusters.

**error analysis:** “Error Analysis involves a set of procedures for identifying, describing and explaining errors in learner language.” Ellis, 2008, p. 961.

**evidence-based teaching:** Instructional practices based on research findings rather than intuition or tradition.

**experimental investigation:** An empirical study that adheres to all requirements of a true experiment, including random group assignment, manipulation of one or more variables, and a control condition.

**false start:** An utterance that is cut off before it is completed, often because a speaker is unsure how to finish the utterance or because of a recognized error. False starts are markers of dysfluency.

**flap:** A sound made when one articulator makes contact with another and is quickly withdrawn. In North American English, a flap occurs medially in *butter* (/ˈbʌt̬r/). In British English, the same sound is realized as [t].

**fluency:** The degree to which speech flows easily without pauses and other dysfluency markers such as false starts.

**focus on form:** A type of instruction that places some emphasis on language structure, but within a broader communicative focus (e.g. providing learners with opportunities to notice particular structures through communicative tasks that require the use of those structures for successful completion).

**focus on formS:** Instruction that is primarily focused on explicit and metalinguistic instruction of grammatical forms and rules.

**foreign accent:** Patterns of speech resulting from L1 influence on the L2 that are noticeably different from native-speaker productions (see accent).

**form-focused instruction:** Any language teaching activity that is intended to draw learners’ attention to a given linguistic form.

**formative assessment:** Assessment designed primarily to help teachers determine whether an instructional trajectory should be changed and to provide feedback for students to facilitate improvement.

**fossilization:** A point during L2 learning when speakers reach a plateau in their L2 language skills, even when exposure to the L2 continues.

**fricative:** A manner of articulation involving constriction of the vocal tract such that the stream of air moving through the reduced opening produces friction; English examples of fricatives include /θ/, /ð/, /ʃ/, /ʒ/, /s/, /z/, /f/, /v/.

**function words:** Words such as determiners and prepositions that express grammatical relationships and that are usually unstressed in English. (See content words.).

**functional load:** A measure of the “work” done by a speech sound in keeping minimal pairs apart. Brown (1991) and Catford (1987) offer rankings of segmental pairs according to their functional load.

**globalization:** The increasing interconnectivity of the world -linguistic, social, economic, and political phenomenon.

**Great Vowel Shift:** A historical change in English vowel pronunciation that occurred roughly between the 13th and the 17th centuries.

**high prestige varieties:** Varieties of English that are considered to carry high social capital, such as Received Pronunciation (RP) in the UK and General American English (GAE) in the USA.

**high variability training:** Perception training which uses multiple voices to produce variable tokens of a target sound or speech sample rather than a single model.

**identification:** The specification of which of a particular set of sounds (or longer units) has been uttered. For instance, being able to circle the letter /n/ (as opposed to /l/) when presented with *night*. Identification contrasts with discrimination, which requires recognizing whether two utterances are different.

**independent variable:** A variable in a research experiment that is being tested to determine whether it will have an effect on another (dependent) variable; see dependent variable.

**ingressive:** A sound made by moving air into, rather than out of, the vocal tract; ingressive sounds are not used in English words.

**insertion:** See epenthesis.

**intelligibility:** A measure of the extent to which a listener has understood what a speaker said. Intelligibility is often evaluated through transcriptions, responses to true/false questions, or answers to comprehension questions.

**Intelligibility Principle:** The notion that the goal of pronunciation instruction should be to help learners become more

understandable by focusing on those aspects of an accent that interfere with listener comprehension; see nativeness principle for a contrasting view.

**interlingual identification:** A tendency for learners to hear L2 sounds in terms of their own L1 phonological inventory.

**inter-rater reliability:** A statistical measure of the degree of agreement among a group of raters.

**interference:** In SLA, the ways in which L1 knowledge appears to cause difficulty in the acquisition of aspects of the L2.

**International Phonetic Alphabet (IPA):** A phonetic transcription system created in 1888 by the International Phonetic Association. IPA is better suited for linguistic analysis than is standard orthography because each distinct sound has its own IPA symbol.

**intonation:** Variations in the pitch of a speaker's voice in an utterance. Intonation serves some linguistic functions such as indicating a yes/no question; however, it can also convey paralinguistic information about the speaker's attitude toward the listener or toward what is being said.

**isochrony:** A hypothetical tendency for certain speech units to have approximately equal durations. Research casts doubt on the actual existence of such a phenomenon.

**Kay SonaGraph:** A device commercialized in the 1950s for speech analysis; it allows researchers to visually inspect components of speech.

**language identification for the determination of origin (LADO):** A type of analysis used by governments to assess the veracity

of information given by asylum seekers about their origins.

**language laboratory:** A room equipped with technology to enhance language learning; traditional language laboratories provided headsets and recorders for every learner with a control centre that could be operated by an instructor.

**lateral:** A type of articulation in which the airstream is slightly impeded, but allowed to pass on one or both sides of the tongue (e.g. /l/).

**length of residence (LOR):** The time an individual has lived in a location where the L2 is the primary language of communication.

**lexical stress:** See word stress.

**light vs. dark /l/:** Two allophones of the English phoneme /l/. Typically, light [l] is produced in prevocalic position, and dark [ɫ] is used following vowels.

**lingua franca:** A common L2 language used among speakers who do not share an L1.

**linking:** The interaction between the segment at the end of one word and the segment at the start of the next in fluent speech. For example, in “plant trees”, the two /t/ phonemes are often pronounced as one longer sound.

**logographic/logosyllabic:** A type of writing system that utilizes characters which can refer to meaning and pronunciation; Chinese characters are an example of a logographic writing system.

**many-to-one:** A relationship between sound and spelling such that different spellings can be used for a single sound, as when /ɛ/ is spelled ⟨e⟩ in bed, ⟨ea⟩ in bread, ⟨ie⟩ in friend, ⟨a⟩ in any, and ⟨oe⟩ in foetid.

**markedness:** In L2 phonology, a concept that distinguishes between a normal or expected (unmarked) phenomenon and one that is less common or less expected (marked). Proponents claim that marked phonological features, segments, and syllable structures are more difficult to acquire than their unmarked counterparts.).

**mean length of utterance (MLU):** A speech measure equal to the average number of words or morphemes in a speaker’s utterances. This measure was borrowed from child language studies, but is often used in second language studies.

**meta-analysis:** A type of statistical study systematically employing the results of several distinct studies of a given phenomenon.

**metalanguage:** Terminology used to describe language; “a prepositional phrase is comprised of a preposition and a noun phrase” is an example of metalanguage.

**minimal pair:** Two words that are identical apart from one phoneme. For example /bæt/ and /bɛt/ constitute a minimal pair.

**mirroring:** A pronunciation technique in which a learner imitates both speech and body movements of another person.

**mora-timed rhythm:** A type of rhythm found in Japanese, Hawaiian, Sanskrit and certain other languages. A single syllable can comprise one or more morae, according to its structure.

**morphology:** An area of linguistics devoted to the examination of meaningful units, both bound and free morphemes.

**motivation:** The wish or willingness to do something (see Willingness to Communicate).

**Nativeness Principle:** The notion that the goal of pronunciation instruction is to help learners sound native-like and that all elements of an L2 accent are undesirable; see intelligibility principle for a contrasting view.

**omission:** See deletion.

**one-to-many:** A relationship between sound and spelling such that a single letter represents several different sounds, as when ⟨g⟩ is pronounced /g/ in *go*, /dʒ/ in *page*, /ʒ/ in *rouge*, and /f/ in *rough*.

**orthography:** The standard set of symbols used to represent language in writing.

**palatal:** A place of articulation involving the tongue and the palate (the roof of the mouth behind the alveolar ridge).

**pause:** A break in an utterance comprised of silence (an unfilled pause) or a verbal space filler such “um” or “uh” (a filled pause).

**peer feedback:** Suggestions or corrections given to a learner by other learners, usually students in the same class, rather than by an instructor.

**perceptual reorganization:** A change in speech perception processes that occurs by the age of 10 to 12 months. This phenomenon, first documented by Janet Werker and colleagues, facilitates L1 learning, but makes it difficult to hear certain L2 sound distinctions.

**Perceptual Assimilation Model:** A model of speech perception developed by Catherine Best that assumes that L2 sounds are perceived in terms of their relationships to L1 perceptual categories.

**performance mistakes:** Slips of the tongue, false starts, and other phenomena unrelated to accent.

**phonological inventory:** The set of speech sounds used in a particular language or variety of language.

**phoneme:** The smallest unit in language that can distinguish meaning.

**phonetic coding ability:** The ability to make and recall links between speech sounds and symbols.

**phonetics:** The study of speech, including articulatory phonetics (how speech sounds are produced), acoustic phonetics (the acoustic properties of speech sounds) and auditory phonetics (human processing of speech).

**phonics:** Rules for determining sound from spelling that make it possible to “sound out a word,” taking into account that certain letters and combinations of letters are typically pronounced in a particular way, e.g. ‘s’ is usually pronounced /s/, but when followed by ‘h’ is usually pronounced /ʃ/.

**phonology:** An area of linguistics in which the systematic relationships among speech sounds are studied.

**phonotactics:** The rules that underlie which sound sequences and combinations are possible in a particular language; for example, in English, /ŋ/ cannot occur word-initially.

**pitch:** The perceptual correlate of sound frequency determined by the rate of vibration of the vocal folds.

**pitch track:** A visual display of the pitch of speech (e.g. Praat displays pitch among many other things).

**positive transfer:** The beneficial effect of using a structure from the L1 when speaking the L2, when the structure is the same in both languages.

**pragmatics:** The study of the appropriate use of language in different contexts. There are two subsets of study: (1) *pragmalinguistics*: knowledge of the linguistic forms necessary to perform speech acts and (2) *sociopragmatics*: awareness of appropriate social and behavioural norms in a second culture.

**precursor period:** The first of Murphy and Baker's four waves describing the development of pronunciation techniques over time. It began in the mid 1800s, during which pedagogical specialists began to reject conventional conceptions of language teaching in favour of an intuitively-based emphasis on spoken communication.

**primary stress:** The heaviest degree of stress possible within a unit of speed. The term has also been used by Laura Hahn in the sense of 'prominence'. See word stress, sentence stress, prominence.

**prominence:** Locations of stress in English that are related to given/new information (new information generally receives more prominence than given information), emphasis (words that the speaker wishes to emphasize are more prominent) and contrastive stress (words are given prominence if they are meant to signal a contrast or contradiction). See stress.

**pronunciation:** The production of the sound system of a language, including segments, prosody, voice quality, and rate.

**prosody:** The aspects of speech at a higher level than segments (consonants or vowels) e.g. stress, intonation, rhythm, and tone.

**quasi-experimental investigation:** An empirical study which meets many, but not all, of the requirements of a true experiment. While quasi-experiments entail

manipulation of one or more variables and include a control condition, they often do not include random assignment to groups.

**random sample:** A subset of a population in which each member of that population is equally likely to be selected. Current research on pronunciation rarely employs random samples.

**recast:** The repetition of an L2 learner's inaccurate production with the error corrected.

**Received Pronunciation:** A dialect of UK English taught in many countries and considered to be the "standard" accent, but which is spoken by only three percent of the UK population.

**reform movement:** The second of Murphy and Baker's four waves describing the development of pronunciation techniques over time. It began in the late 1800s with the development of the International Phonetic Alphabet (IPA) and the application of principles from phonetics to language pedagogy.

**register:** Differences in language use depending on level of formality, familiarity, and other social conventions.. 'How do you do?' and 'Hey' are both greetings but belong to different registers.

**retroflex:** A manner of articulation that entails curling the tip of the tongue back and upward.

**reverse linguistic stereotyping:** A tendency of listeners to ascribe accent features to spoken language when they are not actually present in the speech, based on a speaker's appearance or other social factors.

**rhotic:** A type of articulatory configuration that produces an 'r-like' sound. Some dialects of English (e.g. General American English) are considered rhotic because /ɹ/ is

pronounced before consonants (as in 'start') and in word-final position (as in 'star'). Many British, Australian and New Zealand dialects are non-rhotic.

**rhythm:** The perceived patterns of stress within phrases, clauses, and longer utterances. See stress-timed rhythm, syllable-timed rhythm, and mora-timed rhythm.

**rounding:** Positioning the lips in an "O-like" configuration; examples of rounded segments in English include /u/, /o/ and /w/.

**sample of convenience:** A group of research participants selected on the basis of ready availability and willingness to cooperate, often for monetary compensation. A sample of convenience is not a random sample.

**schwa:** The most common vowel sound in English [ə], often used in unstressed syllables. It is the first sound in *aloud*.

**segments/segmentals:** Vowels and consonants.

**sentence stress:** The pattern of strong and weak syllables in a sentence. In English, content words are typically given more stress than function words in a sentence. See prominence, primary stress, word stress.

**shadowing:** A pronunciation technique whereby a learner imitates a speech model, either at the same time or slightly later.

**shibboleth:** A linguistic marker of a speaker's status as an outsider.

**social distance:** The extent to which members of a given speaker group share social features with some other speaker group. A large social distance predicts that language learning will be impeded.

**sound spectrograph:** An instrument that displays sound visually so that it can be analyzed.

**sounds:** See segmentals.

**speaking rate:** One of the markers of fluency in speech; it is the pace at which a person speaks, usually measured in syllables per second.

**speech volume:** Loudness, usually measured in decibels.

**stereotypes:** An oversimplified generalization about a group.

**stop:** A sound produced by stopping the movement of air in the vocal tract completely; the English stops include: /p/, /b/, /t/, /d/, /k/, /g/, and /ʔ/.

**stress:** The prominence that a particular syllable receives within a word or longer utterance typically due, in English, to increased vowel duration, increased volume, and a change in pitch.

**stress-timed rhythm:** A marked alternation between stressed and weak syllables that characterizes certain languages, including English.

**substitution:** The replacement of a target segment with a different phoneme.

**summative assessment:** A type of assessment primarily used to judge the performance of learners after instruction. Summative assessment is often employed to evaluate educational program outcomes.

**suprasegmental:** See prosody.

**syllabic/syllabary:** A type of orthography that has the syllable as a basis for its symbols. Cherokee uses a syllabary.

**syllable-timed rhythm:** A tendency in languages such as French to produce each syllable in an utterance with relatively equal weight.

**syntax:** The study of the structure of phrases, clauses, and sentences. (Also known as *grammar*.)

**thought group:** A group of words that express a single idea and that are not separated by a noticeable pause.

**tongue twister:** A sentence or longer passage that is intentionally difficult to say because of the sounds that co-occur. Though normally designed as an amusing challenge for native speakers, tongue twisters are sometimes used to teach pronunciation to L2 speakers.

**trill:** A rapid repetition of a given articulatory gesture in which an articulator contacts the place of articulation repeatedly and very quickly. Spanish has a phonemic alveolar trill while Arabic and French both have uvular trills.

**typological proximity:** The degree of similarity between different languages in structural properties.

**ultimate attainment:** The highest level of proficiency a speaker reaches in a second language.

**uvular:** A place of articulation involving the tongue and the uvula (the tissue hanging in the throat from the end of the soft palate).

**visible speech:** A writing system that resembles a phonetic alphabet; it uses symbols

to represent discrete speech sounds, but, unlike many other systems, includes iconic information about the use of the vocal tract.

**voice quality:** The vocal effects of long term settings of the larynx and speech articulators; these settings result in qualities such as nasality, vocal fry, and particular pitch registers.

**voiced vs. unvoiced:** The distinction between sounds that entail vibration of the vocal folds (voiced) during articulation and sounds produced without such vibration (unvoiced). In English, /z/ is voiced while /s/ is unvoiced.

**vowel:** Sounds that do not involve obstruction of air in the vocal tract but are determined by the shape of the vocal tract.

**willingness to communicate (WTC):** “the probability of engaging in communication when free to choose to do so.” MacIntyre, Clément, Dörnyei, & Noels, 1998, p. 546.

**window of maximal opportunity:** The time period during which aspects of L2 pronunciation are most amenable to change.

**word stress (lexical stress):** The particular pattern of prominence found in an individual word. In English, stressed syllables may be longer, louder and higher-pitched than unstressed or “weak” syllables (which have a reduced vowel, usually a schwa). Not every stressed syllable has all three characteristics. In other languages, word stress may be signalled differently.

