

GLOSSARY

- Abduction:** An opening of the vocal folds for voiceless sounds.
- Accent:** A characteristic manner of pronouncing sounds, the result of dialect or native language influence.
- Adduction:** A closing of the vocal folds necessary for voicing.
- Affricate:** A sound that combines a stop closure with a fricative release.
- Allophone:** A variation of a phoneme or a basic sound unit. May be a modified phoneme due to coarticulation.
- Alveolar:** An articulation involving the tip of the tongue and the alveolar ridge, as in "die."
- Alveolar ridge:** The part of the upper surface of the mouth immediately behind the front teeth.
- Antiresonance:** A filtering effect of the vocal tract that causes a loss of acoustic energy in a particular frequency region.
- Aperiodic:** Vibrations with irregular periods.
- Articulation:** Movements made with the articulators that change the shape of the mouth and the resonances of the vocal tract to control the production of sounds. The tongue, lips, teeth, jaw, palate, velum are the articulators. The type and effect of articulation are determined by the amount of constriction of the airflow through the vocal tract and the point at which the constriction occurs, that is, the place of constriction.
- Aspirate:** A sound with friction produced at the glottis; /HH/.
- Assimilation:** A change in the features of a speech sound toward the features of neighboring sounds.
- Bernoulli effect:** The pressure fall caused by increased velocity through a constricted passage.
- Breathy voice:** A whisper-like voice. It may have a slight vibratory excursion of the vocal folds with incomplete glottal closure.
- Coarticulation:** The influence of the production of one sound on another, usually an adjacent sound.
- Consonant:** One of a class of sounds, e.g., /B/, /D/, /G/, /F/, and so forth.
- Continuant:** A speech sound that can be sustained and retain its acoustic characteristics.
- Creaky voice:** See *Vocal fry*.
- Demisyllables:** A speech unit obtained by dividing syllables in half at the middle of the vowel.
- Dental:** A consonant sound produced with contact of the tongue and the teeth.
- Dialect:** A variety of spoken language caused by isolation of one group of speakers from another as a result of geographic, social, political, or economic barriers.
- Diphones:** A speech unit obtained by dividing the speech waveform into units of phonemes, but the division is at the middle of the phoneme.
- Diphthongs:** One of a class of sounds, for example, /OY/ as in boy.
- Dyads:** A speech segment during which the utterance changes from one phoneme to another. Within a dyad, the formants are in transition.
- Electroglottograph:** An instrument used to measure the impedance across the vocal folds.
- Epiglottis:** A flap of cartilage that closes the opening to the trachea to prevent food and liquids from entering the lungs.
- Esophagus:** The hollow muscular tube extending from the pharynx to the stomach.
- Falsetto voice:** A high-pitched voice. It has gradual glottal opening and closing phases with a short or no closed phase.
- Formant:** A major peak, or resonance, in the frequency spectrum of a sound.
- Formant frequency:** The frequency at which the formant resonance, or peak, occurs.
- Fricative:** One of a class of sounds, for example, sounds made by friction such as /F/.
- Fundamental frequency:** The frequency of voicing, that is, the frequency at which the vocal folds vibrate.

- Glide:** A phoneme produced by moving the tongue quickly from one relatively open position to another in the vocal tract.
- Glottis:** The opening between the vocal folds.
- Glottograph:** An instrument used to measure the relative amount of light transmitted through the glottis.
- Hard palate:** The bony partition between the mouth and the nose; the roof of the mouth.
- Harsh voice:** A voice with laryngeal strain and tension and low pitch. It has wide variations in jitter. Sometimes called a rough voice.
- Hoarse voice:** A voice with excessive breathiness and weak in intensity. It is sometimes defined as breathy plus harsh (rough). It is a combination of excessive air escapage and an aperiodicity of vocal fold vibration.
- Idiosyncratic:** A term used to refer to the sound changes that are unique to a particular individual but that may not be analyzable according to any standard phonological process or pattern.
- Intensity:** The power (amplitude) of a sound, which is perceived as its loudness by a listener.
- Intonation:** The pattern of pitch changes that occur during a phrase, which may be a complete sentence.
- Labeling:** Assigning a symbol to a parsed sound (see *Parse*).
- Labiodental:** An articulation involving the lower lip and the upper front teeth.
- Language:** The words, and rules for combining them.
- Laryngograph:** An instrument used to measure the impedance across the vocal folds.
- Larynx:** The cartilages and connective tissue that enclose the vocal folds.
- Lexicon:** A dictionary.
- Mandible:** The lower jaw.
- Modal voice:** A normal voice. During voicing, the glottis has a long opening phase and a rapid closing phase.
- Morpheme:** The minimally meaningful unit of language. Morphemes are either free or bound. Thus the word *cats* is comprised of two morphemes, *cat* (free morpheme) and plural “-s” (bound morpheme).
- Motor theory:** A theory put forth by A. M. Liberman that speech perception makes reference to speech production.
- Myoelastic aerodynamic theory of phonation:** Theory that vocal fold vibration is primarily due to air pressure forces acting on the elastic mass of the folds.
- Nasals:** One of a class of sounds that includes /M/, /N/, /NX/.
- Nasal sounds:** Sounds that are produced with an open velopharyngeal port.
- Neutral vowel:** A vowel produced with the tongue in its rest position, typical of the position for the schwa.
- Normal voice:** Known as a modal voice.
- Oral cavity:** The space inside the mouth.
- Orthography:** The writing and spelling system of a language.
- Palatal:** An articulation involving the front of the tongue and the hard palate, as in *you*.
- Palatalization:** The modification of a sound by moving the tongue close to the palate or the roof of the mouth.
- Parse:** Analysis of speech or text into phonemes, syllables, phrases, clauses, and other segments, and labeling the parsed segments.
- Pharynx:** The section of the digestive tract from the vocal folds to the oral cavity.
- Phon:** A unit of equal loudness.
- Phonation:** The production of voice or voiced sounds by adduction of the vocal folds in relation to the airstream passing through the larynx from the lungs.
- Phone:** An articulated sound, may include whistles, grunts, and so forth.
- Phoneme:** An abstract linguistic unit representing the basic unit in a language. These are the smallest units that distinguish one utterance from another. For English, there are about 40 phonemes. These are grouped into classes such as consonants, fricatives, vowels, diphthongs, nasals, and so on.
- Pitch:** The subjective sensation of the frequency of a sound. The sensation includes the effects of the fundamental frequency of voicing and the intensity of the sound produced.
- Place of articulation:** The point of contact or near-contact of the active and passive articulators in producing a speech sound.
- Poles:** An engineering term for resonances.
- Prosody:** The long-term timing or rhythmic variations of speech, controlled by the pitch, intensity, and timing of speech segments.
- Rough voice:** A grating voice, but very little, if any, breathiness, but with considerable jitter. Also called a harsh voice.

- Semantics:** The meaning of the speech message.
- Semivowels:** One of a class of speech sounds, for example, the liquids /L/ and /R/ and the glides /W/ and /Y/.
- Sibilants:** One of a class of speech sounds, for example, the hissing sounds, such as /S/.
- Sound:** The sensation produced by stimulation of the organs of hearing by vibrations transmitted through the air or another medium.
- Sound pressure level:** The pressure of a sound decibels derived from a pressure ratio; usually expressed as dynes/cm².
- Source function:** The origin of acoustic energy for speech; for vowels at the vocal folds, for voiceless consonants in the vocal tract, and for voiced consonants both at the folds and in the tract. The latter is sometimes called mixed excitation.
- Spectrogram:** A frequency spectrum of the speech signal that varies with time. The spectrogram is drawn in two dimensions with frequency along the ordinate and time along the abscissa. The intensity of the frequency signal is indicated by shades of gray with the darkest gray being the most intense or largest signal.
- Stress:** The emphasis placed on a particular segment of speech.
- Suprasegmental:** Extending over segments of speech such as stress and intonation.
- Syllable:** A vowel and its neighboring consonants.
- Syntax:** The grammar of forming phrases and sentences.
- Tense:** Referring to vowels. Phonetic property of vowels that are produced with slightly higher relative tongue position than lax vowels and with longer durations.
- Trachea:** The windpipe, a tube composed of horseshoe-shaped cartilages leading to the lungs.
- Turbulence:** Friction-like noise characteristic of consonants produced with incomplete closure of the vocal tract.
- Unvoiced sounds:** Sounds produced without vocal fold vibrations. The folds are held open.
- Uvula:** The cone-shaped projection hanging from the lower medial border of the soft palate.
- Velopharyngeal closure:** Closure of the nasal cavity from the oral cavity by contact between the soft palate and pharynx, thus directing the airflow through the mouth rather than the nose.
- Velopharyngeal port:** The passageway connecting oral and nasal cavities.
- Velum:** The soft palate. The soft tissue that controls the valving of air into the nasal passage.
- Ventricular folds:** The "false vocal folds"; the folds above the true vocal folds.
- Vocal folds:** The pair of folds, or cords, within the larynx that vibrate when air is passed from the lungs, thereby producing voiced or vocal sounds.
- Vocal fry:** A vocal mode in which the vocal folds vibrate at such low frequency that the individual vibrations can be heard. Also known as creaky voice. During voicing, the glottal area function has sharp, short pulses followed by a long closed glottal interval. The glottal opening phase may have one, two, or three opening/closing pulses.
- Vocal tract:** The oral cavity, usually including the pharynx to the lips.
- Vocal tract model:** A model of the vocal tract, which may be electronic or mechanical. This model may be used to synthetically generate speech.
- Voice onset time (VOT):** The time between the release of the closure for a stop consonant and the start of voicing of the following vowel.
- Voiced sounds:** Sounds that are produced with the vocal folds vibrating as in vowels or voiced fricatives, such as /Z/.
- Voicing:** The production of sound by the vibration of the vocal folds.
- Vowels:** One of a class of speech sounds produced usually with a fixed vocal tract configuration and with the vocal folds vibrating, such as /AA/.
- Zeros:** An engineering term for antiresonances.