

		places of articulation							
		bilabial	labiodental	(inter)dental	alveolar <sup>9,10</sup>	post-alveolar	palatal	velar	glottal
manners of articulation	oral stops <sup>1,2,3,4</sup>	p b			t d			k g	(ʔ) <sup>5</sup>
	nasal stops <sup>6</sup>	m			n			ŋ	
	fricatives		f v	θ ð	s z	ʃ ʒ			h
	affricates <sup>7</sup>					tʃ dʒ			
	central approximants <sup>2</sup>	W <sup>11</sup>			r <sup>6,12</sup>		j	W <sup>11</sup>	
	lateral approximant <sup>2,6,8</sup>				l				

<sup>1</sup> The oral stops (or more simply, just *stops*) are all *plosives* (stops with egressive pulmonic airflow).

<sup>2</sup> At the beginning of words and beginning of stressed syllables, the voiceless (non-glottal) stops are aspirated: [p<sup>h</sup>æʃ] *pass*, [t<sup>h</sup>æn] *tan*, etc. When these aspirated stops are followed by an approximant, the aspiration is realized as voicelessness in the approximant: [t<sup>h</sup>ru] *true*, [k<sup>h</sup>læs] *class*, [p<sup>h</sup>ju] *pew*, etc.

<sup>3</sup> The voiceless stops are typically unreleased at the end of syllables and often preceded by a glottal closure: [p<sup>h</sup>æʔt̚] *pat*, [t<sup>h</sup>æʔp̚] *tap*, etc. For some speakers, this glottal closure overwhelms the original consonant, especially for /t/, making it become a pure glottal stop [ʔ]: [p<sup>h</sup>æʔ] *pat*.

<sup>4</sup> The voiced stops are typically somewhat voiceless at the beginning of words: [b̥æʔt̚] *bat*.

<sup>5</sup> The glottal stop is only a marginal phoneme of English, contrasting in such near-minimal pairs as [ʔmʔm] *mm-mm* 'no' and [m:] *mmm* 'tasty'.

<sup>6</sup> The nasal stops (or more simply, just *nasals*) and the alveolar approximants are syllabic when preceded by a consonant and not followed by a vowel: [spæzɪ] *spasm*, [hæpɪd] *happened*, [bɪd] *bird*, etc. Sometimes this is perceived as a combination of a vowel plus consonant, especially since the combination is often spelled with a vowel symbol (e.g., *bird*), but a syllabic consonant is a more accurate description. Syllabic [ɹ] is typically transcribed by the special vowel symbols [ɹ̥] (when stressed, as in [bɪd] *bird*) and [ɹ̥̥] (when unstressed, as in [mæstɹ̥] *master*).

<sup>7</sup> Affricates are technically a subtype of oral stops, having a fricated release. The post-alveolar affricates can validly be transcribed as [tʃ] and [dʒ] instead.

<sup>8</sup> The lateral approximant is velarized when not followed by a vowel: [p<sup>h</sup>æɫ] *pal*, [ɛɫk̚] *elk*, etc. As in note 6, when it is also preceded by a consonant, it is syllabic: [æpɫ] *apple*. For many speakers, velarized [ɫ] may be pronounced without any alveolar contact at all: [ɫ], [ɫ̥], or even [w].

<sup>9</sup> Alveolar oral and nasal stops become voiced alveolar taps [ɾ] (oral) and [ɻ] (nasal) between two vowels if the second vowel is unstressed: [læɾɹ̃] *latter/ladder*, [mæɻɹ̃] *manner*, etc.

<sup>10</sup> Alveolar oral and nasal stops and the lateral approximant are often dentalized when followed by a dental fricative: [p<sup>h</sup>æɲθ̚] *panther*, [wɛɲθ̚] *wealth*, etc.

<sup>11</sup> A small number of speakers also have a voiceless labiovelar approximant [ɰ], as in [ɰtʃ] *which* when it is pronounced differently from [wɪtʃ] *witch*.

<sup>12</sup> The alveolar central approximant varies from truly alveolar [ɹ] to retroflex [ɻ] (post-alveolar with the tongue tip curled backwards), and it is somewhat rounded [ɹ<sup>w</sup>] for some speakers. The symbol [ɹ] is not technically the correct IPA symbol (except for Scottish English, which does have a trilled [ɹ]), but it is a useful cover symbol for the wide range of variation this sound has in English.