

VARIABLE Descriptor	CODE & VALUES	
	Code	Value
<i>Language</i>	<b>English L1</b> <b>English L2</b> <b>French L1</b> <b>French L2</b> <b>French L3</b> <b>Italian L1</b> <b>Italian L2</b> <b>Portuguese L1</b> <b>Portuguese L2</b> <b>Romanian L1</b> <b>Romanian L2</b> <b>Spanish L1</b> <b>Spanish L2</b>	English native speaker English second language learner French native speaker French second language learner French third language learner (Steele 2004-08 only) Italian native speaker Italian second language learner Portuguese native speaker Portuguese second language learner Romanian native speaker Romanian second language learner Spanish native speaker Spanish second language learner
<i>Study</i>	FCL FCC ROL L3P LAA OLC RLS	<b>French Stop-liquid Clusters (Steele 2001, 2004)</b> <b>French Word-final Clusters (Steele 1999)</b> <b>L2A of OL Clusters (Colantoni &amp; Steele 2004-05)</b> <b>L3 Phonology (Steele 2004-09)</b> <b>Linguistic Atlas of Argentina (Colantoni 1994-97)</b> <b>OL Clusters (Colantoni &amp; Steele 2003-04)</b> <b>Romance Language Survey</b>
<i>Target phoneme / Preceding phoneme / Following phoneme</i>	# { @ 1 2 3 6 6~ 9 9~ a a~ aj aw A b b: d d: D dz dz: dZ dZ:	Pause Open lax front vowel [æ] Mid central unrounded vowel [ə] Close central unrounded vowel [i] Close-mid front rounded vowel [ø] Open-mid central unrounded vowel [ɜ] Open central vowel [ɐ] Open central nasal vowel [ẽ] Open-mid front rounded vowel [œ] Open-mid front rounded nasal vowel [œ̃] Open front unrounded vowel [a] Open front unrounded nasal vowel [ã] Open front diphthong [aj] Open front diphthong [aw] Open back unrounded vowel [ɑ] Voiced bilabial stop [b] Geminate voiced bilabial stop [b:] Voiced dental/alveolar stop [d] Geminate voiced dental/alveolar stop [d:] Voiced interdental fricative [ð] Voiced alveolar affricate [dz] Geminate voiced alveolar affricate [dz:] Voiced post-alveolar affricate [dʒ] Geminate Voiced post-alveolar affricate [dʒ:]

<b>e</b>	Close-mid front unrounded vowel	[e]
<b>e~</b>	Close-mid front unrounded nasal vowel	[ẽ]
<b>e_X</b>	Non-syllabic tense mid front vowel	[ɛ]
<b>ej</b>	Mid front diphthong	[ej]
<b>E</b>	Open-mid front unrounded vowel	[ɛ]
<b>E~</b>	Open-mid front unrounded nasal vowel	[ẽ]
<b>f</b>	Voiceless labio-dental fricative	[f]
<b>g</b>	Voiced velar stop	[g]
<b>g:</b>	Geminate voiced velar stop	[g:]
<b>h</b>	Voiceless glottal fricative	[h]
<b>H</b>	Rounded palatal glide	[ɥ]
<b>i</b>	Close front unrounded vowel	[i]
<b>i~</b>	Close front unrounded nasal vowel	[ĩ]
<b>I</b>	Close front lax vowel	[ɪ]
<b>j</b>	Unrounded palatal glide	[j]
<b>jj</b>	Voiced palatal fricative	[j̃]
<b>J</b>	Palatal nasal	[ɲ]
<b>k</b>	Voiceless velar stop	[k]
<b>k:</b>	Geminate voiceless velar stop	[k:]
<b>l</b>	Alveolar lateral approximant	[l]
<b>L</b>	Palatal lateral	[ʎ]
<b>m</b>	Bilabial nasal	[m]
<b>n</b>	Alveolar nasal	[n]
<b>N</b>	Velar nasal	[ŋ]
<b>o</b>	Close-mid back rounded vowel	[o]
<b>o~</b>	Close-mid back rounded nasal vowel	[õ]
<b>o_X</b>	Non-syllabic close-mid back rounded vowel	[ɔ]
<b>oj</b>	Close-mid back diphthong	[oj]
<b>O</b>	Open-mid back rounded vowel	[ɔ]
<b>O~</b>	Open-mid back rounded nasal vowel	[õ]
<b>p</b>	Voiceless bilabial stop	[p]
<b>p:</b>	Geminate voiceless bilabial stop	[p:]
<b>r</b>	Voiced alveolar tap (Romance languages)	[r]
	Alveolar rhotic approximant (English)	[ɹ]
<b>rr</b>	Apical trill	[r̄]
<b>R</b>	Uvular fricative	[ʀ]
<b>s</b>	Voiceless alveolar fricative	[s]
<b>S</b>	Voiceless post-alveolar fricative	[ʃ]
<b>t</b>	Voiceless dental/alveolar stop	[t]
<b>t:</b>	Geminate voiceless dental/alveolar stop	[t:]
<b>T</b>	Voiceless interdental fricative	[θ]
<b>ts</b>	Voiceless alveolar affricate	[ts]
<b>ts:</b>	Geminate voiceless alveolar affricate	[ts:]
<b>tS</b>	Voiceless post-alveolar affricate	[tʃ]
<b>tS:</b>	Geminate voiceless post-alveolar affricate	[tʃ:]
<b>u</b>	Close back rounded vowel	[u]

	<b>u~</b>	Close back rounded nasal vowel	[ū]
	<b>U</b>	Close back lax vowel	[u]
	<b>v</b>	Voiced labio-dental fricative	[v]
	<b>V</b>	Open-mid back unrounded vowel	[ʌ]
	<b>w</b>	Labio-velar glide	[w]
	<b>x</b>	Voiceless velar fricative	[x]
	<b>y</b>	Close front rounded vowel	[y]
	<b>z</b>	Voiced alveolar fricative	[z]
	<b>Z</b>	Voiced post-alveolar fricative	[ʒ]
<i>Target grapheme / Preceding grapheme / Following grapheme</i>	<b>#</b>	(Word-initial/final)	
	<b>a</b>	<i>après, médaille</i> (Fr); <i>pato, aula</i> (Sp)	
	<b>à</b>	<i>là-dedans</i> (Fr); <i>città, pietà</i> (It)	
	<b>á</b>	<i>álbum, está</i> (Pt); <i>ámbar, sofá</i> (Sp)	
	<b>ã</b>	<i>ficção, maçã</i> (Pt)	
	<b>â</b>	<i>âge, théâtre</i> (Fr); <i>atât, gâde</i> (Rom)	
	<b>ă</b>	<i>părului, găză</i> (Rom)	
	<b>ai</b>	<i>baignade, mourrai</i> (Fr)	
	<b>an</b>	<i>français, demande</i> (Fr); <i>frango, pranto</i> (Por)	
	<b>au</b>	<i>sauvegarde, costaud</i> (Fr)	
	<b>aw</b>	<i>lawyer, hawed</i> (Eng)	
	<b>ay</b>	<i>clay, highway</i> (Eng)	
	<b>b</b>	<i>beffa, piombo</i> (It); <i>banco, abuelo</i> (Sp)	
	<b>c</b>	<i>cevada, floços</i> (Por); <i>ceva, matcă</i> (Rom)	
	<b>ç</b>	<i>français, leçon</i> (Fr); <i>caçar, absorção</i> (Por)	
	<b>ch</b>	<i>perché</i> (It); <i>chandail</i> (Fr); <i>chapéu</i> (Por); <i>mancha</i> (Sp)	
	<b>ck</b>	<i>jacket, recheck</i> (Eng)	
	<b>d</b>	<i>demain, tendance</i> (Fr); <i>dedo</i> (Sp)	
	<b>dg</b>	<i>fridge</i> (Eng)	
	<b>e</b>	<i>quello, cliente</i> (It); <i>elev, pace</i> (Rom)	
	<b>è</b>	<i>caffè</i> (It); <i>chère, collègue</i> (Fr)	
	<b>é</b>	<i>perché</i> (It); <i>étudiant</i> (Fr); <i>geléia</i> (Por); <i>floté</i> (Sp)	
	<b>ê</b>	<i>bête, honnêteté</i> (Fr); <i>inglês</i> (Por)	
	<b>ë</b>	<i>Noël</i> (Fr)	
	<b>ea</b>	<i>cream, ahead</i> (Eng)	
	<b>eau</b>	<i>beaucoup, chapeau</i> (Fr)	
	<b>ee</b>	<i>free, coffee</i> (Eng)	
	<b>ei</b>	<i>beige</i> (Eng)	
	<b>ein</b>	<i>ceinture, sercin</i> (Fr)	
	<b>en</b>	<i>chrétien, logement</i> (Fr); <i>benzer, entro</i> (Por)	
<b>eu</b>	<i>feuilleter, chanteur</i> (Fr)		
<b>f</b>	<i>fato, bafo</i> (Por); <i>fiesta, afuera</i> (Sp)		
<b>g</b>	<i>gara, gliene</i> (It); <i>geană, vlagă</i> (Rom)		
<b>ge</b>	<i>huge, courage</i> (Eng)		
<b>gh</b>	<i>laughs</i> (Eng)		
<b>gn</b>	<i>gnocco</i> (It); <i>agneau, campagne</i> (Fr)		
<b>gu</b>	<i>guess, analogue</i> (Eng)		

<b>h</b>	<i>hebdo</i> (Fr); <i>herói</i> (Por); <i>hrană</i> (Rom); <i>ahora</i> (Sp)
<b>hu</b>	<i>huitième</i> (Fr)
<b>i</b>	<i>ritmo</i> , <i>sentì</i> (It); <i>idea</i> , <i>vino</i> (Sp)
<b>ì</b>	<i>sentì</i> , <i>sentì</i> (It)
<b>í</b>	<i>ímpar</i> , <i>possível</i> , (Por); <i>rubí</i> (Sp)
<b>î</b>	<i>île</i> , <i>dîner</i> (Fr)
<b>ï</b>	<i>ouïe</i> , <i>haïr</i> (Fr)
<b>ie</b>	<i>pieces</i> , <i>mischief</i> (Eng)
<b>il</b>	<i>chandail</i> , <i>fauteuil</i> (Fr)
<b>ill</b>	<i>bâillement</i> , <i>feuilleter</i> (Fr)
<b>im</b>	<i>importe</i> , <i>timbre</i> (Fr); <i>ímpar</i> (Por)
<b>in</b>	<i>coincé</i> , <i>lapin</i> (Fr); <i>brinquedo</i> , (Por)
<b>j</b>	<i>jurer</i> (Fr); <i>jóia</i> (Por); <i>curaj</i> (Rom); <i>ajo</i> (Sp)
<b>k</b>	<i>kayak</i> , <i>kiwi</i> (Fr); <i>kayak</i> , <i>kiosco</i> (Sp)
<b>l</b>	<i>lourd</i> , <i>soleil</i> (Fr); <i>loma</i> , <i>ala</i> (Sp)
<b>lh</b>	<i>orelha</i> (Por)
<b>ll</b>	<i>giallo</i> (It); <i>allemand</i> , <i>bouteille</i> (Fr); <i>llama</i> , <i>allá</i> (Sp)
<b>m</b>	<i>mort</i> , <i>amour</i> (Fr); <i>amor</i> , <i>campo</i> (Sp)
<b>n</b>	<i>noir</i> , <i>abandon</i> (Fr); <i>negro</i> , <i>andén</i> (Sp)
<b>ñ</b>	<i>niño</i> , <i>ñandú</i> (Sp)
<b>ng</b>	<i>jogging</i> (Fr)
<b>nh</b>	<i>vinha</i> (Por)
<b>o</b>	<i>donner</i> , <i>complot</i> (Fr); <i>rojo</i> , <i>ojo</i> (Sp)
<b>ò</b>	<i>bussò</i> , <i>seminò</i> (It)
<b>ó</b>	<i>móveis</i> , <i>herói</i> , (Por); <i>cópii</i> (Rom); <i>bramó</i> , <i>pasó</i> (Sp)
<b>õ</b>	<i>anões</i> (Por)
<b>ô</b>	<i>pôle</i> , <i>rôle</i> (Fr)
<b>oa</b>	<i>groan</i> , (Eng)
<b>oi</b>	<i>oiseau</i> , <i>patois</i> (Fr)
<b>om</b>	<i>combattre</i> , <i>plomberie</i> (Fr); <i>competir</i> (Por)
<b>on</b>	<i>bondir</i> , <i>flocon</i> (Fr); <i>longe</i> , <i>elétron</i> (Por)
<b>oo</b>	<i>broom</i> , <i>afternoon</i> (Eng)
<b>ou</b>	<i>bouquet</i> , <i>beaucoup</i> (Fr)
<b>où</b>	<i>gôûter</i> , <i>ragoût</i> (Fr)
<b>ow</b>	<i>cow</i> , <i>how'ed</i> (Eng)
<b>oy</b>	<i>boy</i> , <i>hoyed</i> (Eng)
<b>p</b>	<i>piede</i> , <i>zappa</i> (It); <i>pato</i> ; <i>aprender</i> (Sp)
<b>q</b>	<i>quando</i> (It)
<b>qu</b>	<i>pique</i> (Fr); <i>brinquedo</i> (Por); <i>queso</i> , <i>aquí</i> (Sp)
<b>r</b>	<i>rouge</i> , <i>feroce</i> (Fr); <i>pero</i> , <i>perro</i> , <i>enrollar</i> (Sp)
<b>rr</b>	<i>arrasa</i> , <i>perro</i> (Sp)
<b>s</b>	<i>solde</i> , <i>passion</i> (Fr); <i>pasión</i> , <i>sopa</i> , <i>hasta</i> (Sp)
<b>s-comma</b>	<i>șiră</i> (Rom)
<b>sh</b>	<i>shame</i> , <i>brashly</i> (Eng)
<b>t</b>	<i>retrait</i> (Fr); <i>té</i> , <i>trato</i> (Sp)
<b>ț</b>	<i>țară</i> (Rom)

	<b>th</b> <b>tí</b> <b>u</b> <b>ù</b> <b>ú</b> <b>û</b> <b>ü</b> <b>ui</b> <b>un</b> <b>v</b> <b>w</b> <b>x</b> <b>y</b> <b>z</b>	<i>th</i> éâtre (Fr) <i>locat</i> ion (Eng) <i>au</i> la, <i>b</i> usso (It); <i>au</i> daz, <i>u</i> sar (Por) <i>virt</i> ù (It); <i>ou</i> (Fr) <i>j</i> úri (Por); <i>n</i> úmero (Sp) <i>ao</i> ût, <i>déno</i> ûment (Fr) <i>ag</i> üita, <i>lingü</i> ística (Sp) <i>rebu</i> ild (Eng) <i>commu</i> n (Fr); <i>junt</i> ar, <i>m</i> undo (Por) <i>vrai</i> , <i>caverne</i> (Fr); <i>y</i> aso, <i>env</i> yase (Sp) <i>w</i> agon (Fr); <i>wh</i> isky (Sp) <i>ex</i> tra, <i>relax</i> e (Fr); <i>ex</i> tra, <i>ex</i> amen (Sp) <i>y</i> eux, <i>r</i> ayer (Fr); <i>y</i> o, <i>a</i> yer, <i>hoy</i> (Sp) <i>zoo</i> , <i>gaz</i> (Fr); <i>zoo</i> logía, <i>cazar</i> (Sp)
<i>Stress</i>	AP PT TO ST SS	<b>Ante Pre-tonic</b> (two syllables before main stress) <b>Pre-tonic</b> (one syllable before main stress) <b>Tonic</b> (main stress) <b>Post-tonic</b> (syllable following main stress) <b>Post Post-tonic</b> (two syllables following main stress)
<i>Position in word</i>	I M F	<b>Initial</b> <b>Medial</b> <b>Final</b>