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## Contexts of Occurrence of the English Consonant Allophones

### Allophones of /p/:

a) [p<sup>h</sup>] (**strongly aspirated ‘p’**): syllable-initially before stressed vowels, as in pace [p<sup>h</sup>eɪs], packet [p<sup>h</sup>ækɪt], paddle [p<sup>h</sup>ædʌ], page [p<sup>h</sup>eɪdʒ], pageant [p<sup>h</sup>ædʒənt], paid [p<sup>h</sup>eɪd], pain [p<sup>h</sup>eɪn], paint [p<sup>h</sup>eɪnt], palace [p<sup>h</sup>ælɪs], palate [p<sup>h</sup>ælɪt], pale [p<sup>h</sup>eɪt], palm [p<sup>h</sup>ɑ:m], pants [p<sup>h</sup>ænts], parachute [p<sup>h</sup>ærəˌʃa:t], paragraph [p<sup>h</sup>ærəˌgrɑ:f], pardon [p<sup>h</sup>ɑ:rdn], Paris [p<sup>h</sup>æris], park [p<sup>h</sup>ɑ:rk], parlor [p<sup>h</sup>ɑ:rlər], parrot [p<sup>h</sup>ærət], particle [p<sup>h</sup>ɑ:rɪkəl], partner [p<sup>h</sup>ɑ:rtnər], party [p<sup>h</sup>ɑ:rti], passage [p<sup>h</sup>æsɪdʒ], politics [p<sup>h</sup>ələtɪks], passive [p<sup>h</sup>æsɪv], passport [p<sup>h</sup>æsˌpɑ:rt], past [p<sup>h</sup>æst], pastime [p<sup>h</sup>æstˌtaɪm], pastor [p<sup>h</sup>æstər], pasture [p<sup>h</sup>æstʃər], patient [p<sup>h</sup>eɪfɪnt], Patrick [p<sup>h</sup>ætɪk], patriot (AmE) [p<sup>h</sup>eɪtɪjət] (BrE) [p<sup>h</sup>ætɪjət], patron [p<sup>h</sup>eɪtən], Paul [p<sup>h</sup>ɔ:t], paunch [p<sup>h</sup>ɔ:ntʃ], pause [p<sup>h</sup>ɔ:z], pave [p<sup>h</sup>eɪv], paw [p<sup>h</sup>ɔ:], pay [p<sup>h</sup>eɪ], peace [p<sup>h</sup>eɪs], peach [p<sup>h</sup>i:tʃ], peak [p<sup>h</sup>i:k], pearl [p<sup>h</sup>ɜ:rl], peasant [p<sup>h</sup>eznt], peer [p<sup>h</sup>iər], pencil [p<sup>h</sup>ensl], pepper [p<sup>h</sup>epər], perfect (adj) [p<sup>h</sup>ɜ:rfɪkt], peril [p<sup>h</sup>erəl], period [p<sup>h</sup>ɪrɪəd], perish [p<sup>h</sup>eɪʃ], person [p<sup>h</sup>ɜ:rsn], Peter [p<sup>h</sup>i:tər], petrol [p<sup>h</sup>etl], picture [p<sup>h</sup>ɪktʃər], piece [p<sup>h</sup>i:s], pierce [p<sup>h</sup>iərs], pig [p<sup>h</sup>rɪg], pigeon [p<sup>h</sup>ɪdʒən], pillow [p<sup>h</sup>ɪləʊ], pilot [p<sup>h</sup>aɪlət], pink [p<sup>h</sup>ɪŋk], pipe [p<sup>h</sup>aɪp], pirate [p<sup>h</sup>aɪrət], pistol [p<sup>h</sup>ɪstl], pocket [p<sup>h</sup>akɪt], ponder [p<sup>h</sup>ʌndər], pony [p<sup>h</sup>oʊni], poor [p<sup>h</sup>ɔ:ər], Pope [p<sup>h</sup>oʊp], popular [p<sup>h</sup>ɒpjələ], porter [p<sup>h</sup>ɔ:rrər], positive [p<sup>h</sup>ɒzətɪv], possibility [p<sup>h</sup>ɒsəˌbɪləti], possible [p<sup>h</sup>ɒsəbəl], postulation [p<sup>h</sup>ɒstʃəˌleɪʃn], pound [p<sup>h</sup>aʊnd], pour [p<sup>h</sup>ɔ:ər], poverty [p<sup>h</sup>ɒvərti], public [p<sup>h</sup>ʌblɪk], publish [p<sup>h</sup>ʌblɪʃ], pull [p<sup>h</sup>ʊt], punch [p<sup>h</sup>ʌntʃ], punctual [p<sup>h</sup>ʌŋktʃuəl], punish [p<sup>h</sup>ʌnɪʃ], puppet [p<sup>h</sup>ʌpɪt], purchase [p<sup>h</sup>ɜ:rtʃəs], purple [p<sup>h</sup>ɜ:rpəl], purpose [p<sup>h</sup>ɜ:rpəs], put [p<sup>h</sup>ʊt]; apparent [əp<sup>h</sup>ærənt], appeal [əp<sup>h</sup>i:t], appear [əp<sup>h</sup>iər], apologize [əp<sup>h</sup>ələˌdʒaɪz], appoint [əp<sup>h</sup>ɔɪnt], apostle [əp<sup>h</sup>ɒstl], bypass [ˌbaɪp<sup>h</sup>æs], capacity [kəp<sup>h</sup>æsəti], compare [kəm<sup>h</sup>pær], compete [kəm<sup>h</sup>pɪt], compound [kəm<sup>h</sup>pʌnd], depend [dɪp<sup>h</sup>end], hypothesis [haɪp<sup>h</sup>əθəsɪs], Japan [dʒəp<sup>h</sup>æn], oppose [əp<sup>h</sup>oʊz], propose [prəp<sup>h</sup>oʊz], rapport [rəp<sup>h</sup>ɔ:rt], repeat [rɪp<sup>h</sup>i:t], repel [rɪp<sup>h</sup>et], repent [rɪp<sup>h</sup>ent], support [səp<sup>h</sup>ɔ:rt], suppose [səp<sup>h</sup>oʊz], typology [tɪp<sup>h</sup>ələdʒi].

### b) [p] (**weakly aspirated ‘p’**):

b.1. before unstressed vowels, as in epic [ˈepɪk], capable [kəˈpeɪəbəl], police [pəˈli:s], polite [pəˈlaɪt].

b.2. word-finally (optionally): cap [kʰæp], cop [kʰɒp], cup [kʰʌp], deep [di:p], dope [dɒp], group [gru:p], hope [ho:p], keep [ki:p], lip [lɪp], map [mæp], soap [so:p], soup [su:p], shop [ʃɒp], sleep [sli:p], Stop! [stɒp], tape [teɪp], up [ʌp], Get up! [gɛt\_ʌp]; gulp [gʌlp], help [help]; camp [kʰæmp], damp [dʌmp], jump [dʒʌmp], lamp [læmp], pump [pʰʌmp]; carp [kʰɑ:rp], chirp [tʃɜ:rp], sharp [ʃɑ:rp], warp [wɔ:rp]; clasp [klæsp], gasp [gæsp], grasp [græsp], wasp [wɒsp].

**c) [p] (unaspirated 'p'):**

a.2. before /l,r,j/, forming syllable initial clusters with them (Note: The strong aspiration is not indicated but it causes the devoicing of the following sound.), as in play [p\l\0e\I], pray [p\r\0e\I], puke [pj\0u:k\].

c.1. after `s' forming, a syllable-initial cluster with it: [sp-] as in expensive [\Ik\spens\Iv\0], spank [sp\ank\], spanner ['sp\an\er], space [spe\Is], sparkle['sp\A:rk\l~\,], spatial['spe\I\s\l~\,], spare [sp\E\er], speech [spi:t\s], speed [spi:d\0], spell [spe\l~\], spend [spend\0], species['spi:s\Iz\0], spider ['spa\I\der], spinach ['sp\In\It\s], spiritual ['sp\Ir\It\s\Ue\l~\,], sponge [sp\und\0\_\(\z\_\)], sponsor ['sp\A:ns\er], spoon [spu:n\], spontaneously [\,sp\A:n'the\In\Iesl\I]; [sp\l\0-] explain [\Ik\sp\l\0e\In], splash [sp\l\0a\s], splendid ['sp\l\0end\I\0], splice [sp\l\0a\Is], splinter ['sp\l\0\Int\er], splutter ['sp\l\0ut\er]; [sp\r\0-] as in sprang [sp\r\0a\n], spray [sp\r\0e\I], spread [sp\r\0ed\0], spree [sp\r\0i:], spring[sp\r\0\In], sprinkle ['sp\r\0\Ink\l~\,], sprite [sp\r\0a\It\], sprung [sp\r\0u\n].

c.2. before syllabic (dark) `l', as in people ['p^hi:p\l~\,], coupling ['k^h\up\l\,I\n].

c.3. before nasal, as in topmost ['t^h\A:p,m\e\Ust\], cheap meat ['t^si:p \5mi:t\].

c.4. before /t/, usually forming a cluster with it: [-pt\] as in adapt [\e\d\apt\], adopt [\e\d\A:pt\], captain ['k^h\aptn\,], mopped [m\A:pt\], stooped [stu:pt\], swept [sw\0ept\], taped [t^he\Ipt\], wiped [wa\Ipt\]; [-l\~pt\] as in gulped [g\u\l~pt\], helped [he\l~pt\]; [-mpt\] as in attempt [\e't^hempt\], camped [k^h\ampt\], dumped [d\0\umpt\], limped [l\Impt\], prompt [p\r\0\A:mpt\], pumped [p^h\umpt\], stamped [st\ampt\]; [-rpt\] as in carped [k^h\A:rpt\], chirped [t^s\3:rpt\0\]; [-spt\] as in clasped [k\l\0\aspt\], grasped [gr\aspt\].

c.5. before `s', forming a word-final cluster with it: [-ps] as in caps [k^h\aps], hopes [h\e\Ups], keeps [k^hi:ps], steps [st\0eps], tapes [t^he\Ips]; [-l\~ps] as in gulps [g\u\l~ps], helps [he\l~ps]; [-mps] as in camps [k^h\amps], lamps [l\amps], pumps [p^h\umps]; [-rps] as in carps [k^h\A:rps], chirps [t^s\3:rps], w\0arps [w\0:rps]; [-sps] clasps [k\l\0\asps], gasps [g\asps], wasps [w\A:sps].

**Allophones of /b/:**

a) [b] (fully voiced `b')

a.1. between vowels, as in Cuba ['kj\0u:b\e], labor ['le\Ib\er], maybe ['me\Ib\I], neighbor ['ne\Ib\er].

a.2. word-internally, in contact with voiced consonants, as in husband [ˈhʌzbd̩], remember [rɪˈmemb̩ər].

a.3. before syllabic dark ɫ, as in bubble [ˈbʊbəl̩], rabble [ˈrʌbəl̩].

a.4. before word-final /d/ and /z/, forming clusters with them: [-bd̩] as in barbed [bʌːrbd̩], bribed [brɪbd̩], dubbed [dʊbd̩], mobbed [mɒbd̩], prescribed [prɪˈskraɪbd̩], rubbed [rʊbd̩], sobbed [sɒbd̩], transcribed [ˌtrʌnskraɪbd̩]; [-bz̩] as in bribes [brɪbz̩], clubs [klʌbz̩], lobes [ləbz̩], robes [rəbz̩], tubs [tʰʌbz̩].

b) [b̥] (partially devoiced ˈb')

b.1. word-initially: (before vowels) as in back

[b̥ak], ban [b̥an], bake [b̥eɪk], bath [b̥aθ], beach [b̥i:tʃ], beam [b̥i:m], bear [b̥eə], been [b̥i:n] (AmE) or [b̥i:n] (BrE), beer [b̥eə], bike [b̥aɪk], book [b̥ʊk], bush [b̥ʊʃ], bench [b̥entʃ]; (before /l, r, j/, forming clusters with them)

[b̥l-] as in black [b̥læk], blackmail [b̥lækmeɪl], blame [b̥leɪm], bleed [b̥li:d], bleach [b̥li:tʃ], blew [b̥lu:], blind [b̥laɪnd], blink [b̥lɪŋk], blood [b̥lʊd], bloom [b̥lu:m], blow [b̥lɔ:], blue [b̥lu:]; [br-] as in brat

[bræt], branch [brʌntʃ], brake [breɪk], brain [breɪn], brave [breɪv], bread [bred], breakfast [ˈbrekfɛst], break [breɪk], breast [breɪst], breath [breθ], breed [bri:d], brief [brɪf], bring [brɪŋ], bridge [brɪdʒ], bright [braɪt], bristle [ˈbrɪsəl], Britain [ˈbrɪtən], broad [brɔ:d], broken [ˈbrɔ:kən], broom [brʊm], brother [ˈbrʌðər], brought [brɔ:t], brow [braʊ], brush [brʊʃ]; [bj-] as in beautiful [ˈbju:tɪfəl], beauty [ˈbju:tɪ], bugle [ˈbju:gl̩], Buick [ˈbju:ɪk], bureau [ˈbjʊreɪ], butane [ˈbjʊ:tən].

b.2. word-finally (fully devoiced), as in cab

[k<sup>h</sup>ab], club [k<sup>h</sup>l<sup>h</sup>ub], tub [t<sup>h</sup>ub].

b.3. in contact with voiceless consonants, as in blackboard [ˈblæk, b<sup>h</sup>o:rd],  
hubcap [ˈh<sup>h</sup>ub, k<sup>h</sup>ap].

Of /t/:

a) [t<sup>h</sup>] (strongly aspirated `t'):

a.1. syllable-initially before stressed vowels, as in table [ˈt<sup>h</sup>eɪb<sup>h</sup>l̩~], talk [t<sup>h</sup>ɔk],  
tame [te<sup>h</sup>ɪm],

tax [t<sup>h</sup>aks], teach [ti:t<sup>h</sup>s], tear [t<sup>h</sup>ɛər] (v.)  
[t<sup>h</sup>ɪər] (n.), teen [ti:n], term [t<sup>h</sup>ɜ:rm], time  
[t<sup>h</sup>aɪm], tip [t<sup>h</sup>ɪp], Thomas [ˈt<sup>h</sup>ɑ:məs], ton  
[t<sup>h</sup>ʊn], tongue [t<sup>h</sup>uŋ], took [t<sup>h</sup>ʊk], tool  
[t<sup>h</sup>u:l̩~], tooth [t<sup>h</sup>u:t], touch [t<sup>h</sup>ʊt<sup>h</sup>s], tough  
[t<sup>h</sup>ʊf], thought [t<sup>h</sup>ɔt], Tuesday [ˈt<sup>h</sup>u:zdeɪ],  
turn [t<sup>h</sup>ɜ:rn]; attach [əˈt<sup>h</sup>ætʃ], attain [əˈt<sup>h</sup>eɪn],  
attack [əˈt<sup>h</sup>æk], attempt [əˈt<sup>h</sup>empt], attend  
[əˈt<sup>h</sup>end], atypical [əˈt<sup>h</sup>ɪp(ɪ)k(ə)l̩~], eternal  
[ɪˈt<sup>h</sup>ɜ:rn̩~], Italian [ɪˈt<sup>h</sup>alɪən], italic  
[ɪˈt<sup>h</sup>alɪk], intelligent [ɪnˈt<sup>h</sup>elɪdʒənt],  
interpret [ɪnˈt<sup>h</sup>ɜ:rpɪt], politician  
[ˌp(ɪ)lɪˈt<sup>h</sup>ɪsn̩], utility [ˌju:ˈt<sup>h</sup>ɪlɪtɪ].

a.2. before /r, j, w/, forming a syllable-initial cluster with them (Note: the aspiration  
is not indicated but the devoicing of the following sound is): [t<sup>h</sup>r̩-] as in track  
[t<sup>h</sup>r̩æk], trade

[t<sup>h</sup>r̩eɪd], train [t<sup>h</sup>r̩eɪn], tray [t<sup>h</sup>r̩eɪ], treat  
[t<sup>h</sup>r̩i:t], tree [t<sup>h</sup>r̩i:], trip [t<sup>h</sup>r̩ɪp], true  
[t<sup>h</sup>r̩u:], troop [t<sup>h</sup>r̩u:p], trunk [t<sup>h</sup>r̩ʌŋk], trust  
[t<sup>h</sup>r̩ʌst], try [t<sup>h</sup>r̩aɪ]; [t<sup>h</sup>j̩-] (esp. BrE) as in  
stupid [ˈst<sup>h</sup>j̩p(ɪ)d], tube [t<sup>h</sup>j̩b], Tudor  
[ˈt<sup>h</sup>j̩dər], tuition [ˌt<sup>h</sup>j̩ʃn̩], tulip  
[ˈt<sup>h</sup>j̩lɪp], tumor [t<sup>h</sup>j̩mər], tumult  
[ˈt<sup>h</sup>j̩m(ə)l̩~t], tune [t<sup>h</sup>j̩n], tutor  
[ˈt<sup>h</sup>j̩t(ər)]; [t<sup>h</sup>w̩-] as in between [b<sup>h</sup>etw̩i:n],  
twaddle [ˈt<sup>h</sup>w̩d(ə)l̩~], Twain [t<sup>h</sup>w̩eɪn], tweezers  
[ˈt<sup>h</sup>w̩i:zəz], twelfth [ˈt<sup>h</sup>w̩eɪfθ], twelve [ˈt<sup>h</sup>w̩elv],  
twice [t<sup>h</sup>w̩aɪs], twig [t<sup>h</sup>w̩ɪg], twilight

[ˈtwɔəlaɪlɪtʃ], twin [twɪn], twinkle [ˈtwɪŋkəl̩],  
twist [twɪst].

b) [t̪] (weakly aspirated `t`):

b.1. before unstressed vowels, as in autumn

[ˈɒt(ə)m], bottom [ˈbɒt(ə)m], daughter [ˈdɔ(ə)t(ə)r],  
doctor [ˈdɒkt(ə)r], cottage [ˈkɒt(ə)dʒ(ə)], custom  
[ˈkʌst(ə)m], matter [ˈmæt(ə)], native  
[ˈneɪt(ə)v], party [ˈpɑːrt(ə)], rooster  
[ˈruːst(ə)r], sister [ˈsɪst(ə)r], system  
[ˈsɪst(ə)m], together [t(ə)ˈgeð(ə)r], tomato  
[t(ə)ˈmeɪt(ə)ʊ], to eat [t(ə)ˈiːt(ə)], winter  
[ˈwɪnt(ə)r].

b.2. before vowels with secondary stress, as in the words sometimes  
[ˈsʌm(ə)t(ə)ɪz], typology  
[ˈtɪp(ə)lɒʒ(ə)].

b.3. word-finally (at the end of a sentence or before a pause): (after vowels) as  
in at [ət(ə)], ate [eɪt(ə)], caught [kɔ(ə)t(ə)], debt [d(ə)t(ə)],

doubt [daʊt(ə)], dot [dɒt(ə)], eat [iːt(ə)], eight  
[eɪt(ə)], flat [flæt(ə)], got [gɒt(ə)], mat [mæt(ə)],  
meat [miːt(ə)], meet [miːt(ə)], neat [niːt(ə)], not [nɒt(ə)], nut [nʌt(ə)], ought [ɔ(ə)t(ə)],

pat [pæt(ə)],

Pete [piːt(ə)], rat [ræt(ə)], rote [rɔ(ə)t(ə)], right  
[raɪt(ə)], suit [suːt(ə)], shut [ʃʊt(ə)], sweat  
[swet(ə)], vat [væt(ə)], vote [vɔ(ə)t(ə)], wheat [wiːt(ə)],  
wait [weɪt(ə)], white [waɪt(ə)]; (after other con-  
sonants, forming clusters with them) [-ft(ə)] as  
in coughed [kɔ(ə)ft(ə)], gift [gɪft(ə)], laughed  
[lɔ(ə)ft(ə)], left [left(ə)], lift [lɪft(ə)], puffed  
[pʌft(ə)], soft [sɔ(ə)ft(ə)]; [-l̩~t(ə)] as in belt  
[bɛl̩~t(ə)], built [bɪl̩~t(ə)], fault [fɔ(ə)l̩~t(ə)], felt  
[feɪl̩~t(ə)], guilt [gɪl̩~t(ə)], salt [sɔ(ə)l̩~t(ə)]; [-nt(ə)]  
as in ant [ant(ə)], aunt [aʊnt(ə)], front [frʌnt(ə)],  
lent [lent(ə)], paint [peɪnt(ə)], plant [plɑ(ə)nt(ə)],  
pint [pɪnt(ə)], rent [rent(ə)], went [went(ə)];  
[-pt(ə)] as in apt [apt(ə)], hoped [hɒpt(ə)],

shopped [ʃ\A\pt], wiped [wa\Ipt]; [-rt] as in  
art [A\rt], court [k<sup>h</sup>\O\rt], dirt [d\0\3\rt],  
heart [h\A\rt], hurt [h\3\rt], mart [m\A\rt],  
quart [kw\0\O\rt], sort [s\O\rt]; [-st] \0 as in  
beast [b\0i\st], fist [f\Ist], ghost [g\e\Ust],  
host [h\e\Ust], last [l\ast], mist [m\Ist],  
priest [p\r\0i\st], promised [p\r\0\A\m\Ist], waist  
[we\Ist], wrist [r\Ist]; [-st] as in bashed  
[b\0\ast], cashed [k<sup>h</sup>\ast], furnished  
[f\3\rn\Ist], pushed [p<sup>h</sup>\Ust], rushed [r\ust],  
wished [w\Ist]; [-tst] as in arched [A\rt\st],  
drenched [d\0rent\st], launched [l\ont\st] lunched  
[l\unt\st], munched [m\unt\st], reached [ri\t\st],  
searched [s\3\rt\st], touched [t<sup>h</sup>\ut\st]; [-kst]  
as in fixed [f\Ikst], mixed [m\Ikst], text  
[t<sup>h</sup>ekst]; [-mpt] as in attempt [e\thempt],  
exempt [Ig\zempt], prompt [p\r\0\A\mpt]; [-spt]  
as in clasped [k\l\0\aspt], lisped [l\Ispt];  
[-rpt] as in carped [k<sup>h</sup>\A\rpt], warped  
[w\O\rpt]; [-rft] as in dwarfed [d\0w\O\rft];  
scarfed [sk\A\rft]; [-rkt] as in barked  
[b\0\A\rkt], parked [p<sup>h</sup>\A\rkt]; [-skt] as in  
asked [askt], risked [r\Ikst].

c) [t] (unaspirated `t):

c.1. after `s', forming a syllable-initial cluster with it, as in staff [st\af], stain [ste\In],

state [ste\It], stay [ste\I], steel [sti\l~],  
stone [ste\Un], study [st\ud\I]; straight  
[st\r\0e\It], straw [st\r\0\o], stream [st\r\0i\m], strike  
[st\r\0a\Ik], strong [st\r\0\on], struck [st\r\0\uk],  
stupid [stj\0u\p\l\0], construct [k\en\st\r\0\ukt].

c.2. before syllabic (dark) `l', as in cattle [k<sup>h</sup>at\l~], little [l\It\l~], metal [met\l~].

c.3. before nasal, as in button [b\0\utn], captain

[kʰaptn], certain [sɜːrtɪn], chutney  
[tʰsʊtn], cottʌn[kʰʌːtn], mountain[mʌʊntn],  
nutmeg [nʊtmeg], utmost [ʊtməʊst].

c.4. before other plosives, as in football

[fʊtbɔːl], hatpin [hætˌpɪn], outpost  
[aʊtpɒst], That dog [ðæt dɔːg], A  
white tie [waɪt ˌtaɪ].

c.5. before affricates, as in A fat judge [eɪ fæt ʤɪdʒ], A great  
joke [eɪ ˈɡreɪt ʤɔːk], white  
chalk [waɪt ʃɔːk].

c.6. before `s': [-ts] as in eats [iːts], debts

[dɔːts], doubts [daʊts], hates [heɪts], huts  
[hʌts], kites [kaɪts], let's [lets], mates  
[meɪts], meets [miːts], nuts [nʌts], pits  
[pɪts], pats[pæt], rates [reɪts], sweets  
[swiːts]; [-fts] as in gifts [gɪfts], lifts  
[lɪfts]; [-kts] as in acts [ækt], facts  
[fækt], pacts [pækt]; [-lɪts] as in belts  
[belts], faults [fɔːlt], salts [sɔːlt]; [-nts]  
as in fronts [frʌnts], paints[pɪnts]; [-rts]  
as in courts[kɔːrts], hearts [hɑːrts]; [-sts]  
as in fists [fɪsts], fasts [fæst], waists  
[weɪsts]; [-mpts] as in exempts [ɪgˈzempt],  
prompts [prɒmpt].

d) [t̪] (dentalized `t'): before /t,d/, as in eighth

[eɪt̪], At that time [æt̪ t̪aɪm], Cut thumbs  
[kʰʊt̪].

e) [t̠] (post-alveolarized `t'): before /r/, as in trade

[t̠reɪd], tram [trʌm], try [t̠raɪ].

f) [ɾ] (flap or flapped `t'): usually between a stressed

vowel and an unstressed one, or between a stressed  
vowel and syllabic dark `l' (very common in American  
English), as in better [ˈbet̠ər], later [ˈleɪər], water

[ˈwA:ːer], writer [ˈraɪer]; battle [ˈbɒl̩əːl̩~], kettle [ˈkʰel̩~], little [ˈlɪl̩~], rattle [ˈrəl̩~]; dirty [ˈdɪr̩], party [ˈpɑːr̩], thirty [ˈθɜːr̩], myrtle [ˈmɜːr̩~], turtle [ˈtɜːr̩~].

g) [ʔ] (glottal stop). This allophone is quite common in British English, especially in London Cockney:

g.1. between a stressed and an unstressed vowel, as in butter [ˈbʊtʔe], kitty [ˈkɪtʔɪ], fatter [ˈfætʔe].

g.2. between a stressed vowel and syllabic `l' or syllabic `n', as in bottle [ˈbɒl̩ʔl̩~], little [ˈlɪl̩ʔl̩~], bitten [ˈbɪt̩ʔn̩~], fatten [ˈfæt̩ʔn̩~].

g.3. word-finally, usually before other consonants, as in eight books [ˈeɪtʔ ˈbʊks], Eat quickly [ˈiːtʔ ˈkwɪkli].

Of /d/:

a) [d] (fully voiced `d'):

a.1. between vowels, as in Adam [ˈadəm], audible [ˈɒdɪbəl~], body [ˈbɒdɪ], buddy [ˈbʊdɪ], confidence [ˈkɒnfɪdəns], daddy [ˈdɒdɪ], decided [dɪˈsɪdaɪd], edict [ˈiːdɪkt], Edith [ˈiːdɪt], Friday [ˈfrɪdaɪ], giddy [ˈgɪdɪ], holiday [ˈhɒlɪdeɪ], idea [aɪˈdɪe], Judith [ˈdʊdɪt], kidding [ˈkɪdɪŋ], lady [ˈleɪdɪ], medicine [ˈmedɪsn̩], modern [ˈmɒdɪrn], moderate [ˈmɒdɪrət], needed [ˈniːdɪd], persuaded [pɪˈswɛdaɪd], prejudice [ˈpreʒɪdʒɪs], radio [ˈreɪdɪe], toddy [ˈtɒdɪ], udder [ˈʊdɪr], widow [ˈwɪdɪe].

a.2. word-internally, in contact with other voiced consonants: (after consonants) as in builder [ˈbɪldɪr], Corder [ˈkɒrdɪr], herder [ˈhɜːrdɪr], industry [ˈɪndɪstrɪ], Monday [ˈmʌndeɪ], older [ˈeʊldɪr], shoulder [ˈʃɔːldɪr].



Wednesday [ˈwenzdeɪ]; (before word-final /z/,  
forming a cluster with it) as in adds [ˈadz],  
blades [ˈbleɪdz], guides [gaɪdz], loads [leɪdz],  
maids [meɪdz], reads [riːdz], spreads [spɪrɔedz],  
wades [weɪdz]; [-l~dz] as in colds [kɒl~dz],  
fields [fiːldz], molds [mɒl~dz]; [-ndz] as in  
finds [faɪndz], husbands [ˈhʌzbəndz], islands  
[ˈaɪləndz], kinds [kaɪndz], rounds [raʊndz],  
tends [tendz], winds [waɪndz] (n.) or  
[waɪndz] (v.); [-rdz] as in cupboards  
[ˈkʌpbɔːrdz], records [ˈrekɔːrdz] (n.) or  
[rɪˈkɔːrdz] (v.), swords [sɔːrdz]; admit  
[ədˈmɪt], advice [ədˈvaɪs].

a.3. before other voiced plosives or voiced affri-  
cates, as in bad book [ˈbʌd bʊk], bad judge  
[ˈbʌd ʒʌdʒ].

a.4. before syllabic dark `l', as in ladle [ˈleɪdl̩],  
medal [ˈmedl̩], paddle [ˈpædl̩], saddle [ˈsædl̩].

a.5. before syllabic `n', as in hidden [ˈhɪdn̩],  
maiden [ˈmeɪdn̩], ridden [ˈrɪdn̩], sudden  
[ˈsʌdn̩].

b) [d] (partially devoiced):

b.1. word-initially: (before vowels) as in dare [dɛər],  
daughter [ˈdɔːtər], dawn [dɔːn], deer [dɪər], deaf  
[dɛf], desert [ˈdɛzət], dessert [ˈdɛzɜːrt],  
devil [ˈdɛvəl], donkey [ˈdɒŋki], during [ˈdʊrɪŋ];  
(before /r,j,w/, forming a syllable-initial clus-  
ter with them) [dɔr-] as in address [əˈdres] (v.),  
or adrift [əˈdrɪft], draw [dɔrə], dream [dɔri:m],  
drought [dɔrəʊt], drown [dɔrəʊn], drunk [dɔrʊŋk],  
hundred [ˈhʌndrɪd]; [dɔj-] (esp. BrE) as in dubious  
[ˈdʊjʊːbɪəs], due [dʊj:], dune [dʊjʊːn], dupe  
[dʊjʊːp], duplicate [ˈdʊjʊːpɪleɪk] (adj. or n.)  
or [ˈdʊjʊːpɪleɪk] (v.), during [ˈdʊjʊrɪŋ], duty  
[ˈdʊjʊːtɪ]; [dɔw-] as in dwarf [dɔwɔːrf], dwell  
[dɔweɪl], dwindle [ˈdɔwɪndl̩].

b.2. word-finally, after other consonants, forming clusters with them: [-bd] as in bribed [bɔraɪbd], dubbed [dʊbd], robbed [rɔ:bd], sobbed [sɔ:bd], transcribed [ˌtrɔnˈskrɔaɪbd]; [-gd] as in begged [bɔegd], hugged [hʊgd], logged [lɔ:gd], tagged [tʰagd]; [-l~d] as in child[tʰsaɪl~d], hold [hɛʊl~d], mailed [meɪl~d], mulled [mʊl~d], smiled [smaɪl~d], wild [waɪl~d]; [-md] as in aimed [eɪmd], ashamed [əˈseɪmd], bombed[bɔA:md], combed[kʰeʊmd], climbed [kɪlɔamd], dreamed [dri:md], seemed [si:md]; [-nd] as in and [and], fund [fʌnd], island [ˈaɪlənd], sand [sænd]; [-nd] as in belonged [bɔlɔˈlɔnd], prolonged[pɹɔˈlɔnd]; [-rd] as in bard [bɔA:rd], bored [bɔO:rd], cupboard[kʰʊbɔrd], murdered [ˈmɜ:rdɔrd], ordered [ˈɔ:rdɔrd], standard [ˈstændɔrd], tired [tʰaɪɔrd]; [-vd] as in arrived [əˈraɪvd], behaved [bɔɪˈheɪvd], loved [lʊvd], moved [mu:vd], saved [seɪvd]; [-zd] as in amused [əˈmjuzd], buzzed [ˈbʊuzd], closed [kloʊzd], confused [kənˈfju:zd], gazed [geɪzɔd], prized [praɔzɔd], pleased [pli:zɔd], raised [reɪzɔd], used [ju:zɔd]; [-dd] as in bathed [bɔeɪdd], breathed [bɔri:dd], mouthed [maʊdd], smoothed [smʊ:dd], soothed [su:dd], teethed [tʰi:dd]; [-d] as in bridged [brɪdʒd], changed [tʰseɪndʒd], damaged [ˈdʌmɪdʒd], encouraged [ɪnˈkʰɜ:rdʒd], engaged [ɪnˈgeɪdʒd], managed [ˈmænɪdʒd], urged [ɜ:rdʒd].

b.3. In contact with voiceless consonants (either word-internally or at word boundaries), as in bed time [ˈbɛdɪm], birthday [ˈbɜ:rdɪdɪ], good cheese [ˈgʊdʃi:z].

c. [d̥] (dentalized ˈd): before /t/ or /d/, as in breadth [bred̥t], bad theme [ˈbæd̥θɪ:m], hundredth [ˈhʌndrɪd̥t], width [wɪd̥t], She was so sad that she cried [ˈʃi:wɛz sɛʊ sɔd̥tætʃeɪkrɪd̥].

NOTE: When more than one of the following diacritics [ ̥, ̌, ̎, ̏, ̐ ] should be marked on a given phonetic symbol at the same time, by agreement we will mark only one of them, as it is appropriate to the case in question. For example, in (c) above, /d/ was both devoiced and dentalized. We decided to mark only dentali-

zation to illustrate the allophone that we were studying at the moment.

d) [d] (post-aveolarized `d'): before /r/, as in address [e`dres], drain [dreIn], drink [drInk], dry [draI].

e) [ɾ] (flapped `d', or simply flap) (Very common in American English):

e.1. between a stressed vowel and an unstressed one, as in Adam [`aem], buddy [b0u`I], lady [leI`I], needed [ni: `Id0], madam [m`aem], rider [raI`er]; according [e`k<sup>h</sup>0:r`In], birdie [b03:r`I], murder [m3:r`er], order [O:r`er].

e.2. between a stressed vowel and syllabic dark `l', as in ladle [le0I`l~.], middle [mI`l~.], saddle [s`a`l~.]; girdle [g3:r`l~.].

The flap sound occurs:

a) between an accented vowel and an unaccented one, either within a word or at word boundaries, as in Adam [`aem], atom [a`em], Betty [b0e`I], cutter [k<sup>h</sup>u`er], fatty [f`a`I], Got it [5gA: `It], lady [leI`I], later [leI`er], Let him go [le`Im 5geU], madam [m`aem], needed [ni: `Id0], I need it [aI 5ni: `It], sadder [s`a`er], Write it down [raI`It 5d0AUn].

b) between an accented vowel and a syllabic (usually dark) `l', as in bottle [b0A: `l~.], cattle [k<sup>h</sup>a`l~.], fuddle [fu`l~.], kettle [k<sup>h</sup>e`l~.], ladle [leI`l~.], little [lI`l~.], medal [me`l~.], rattle [r`a`l~.], saddle [s`a`l~.], title [t<sup>h</sup>aI`l~.].

In American English, an `r' can occur before /t/ or /d/, as in according [e`k<sup>h</sup>0:r`In], birdie [b03:r`I], dirty [d03:r`I], forty [f0:r`I], girdle [g3:r`l~.], harder [h`A:r`er], martyr [m`A:r`er], murder [m3:r`er], order [O:r`er], party [p<sup>h</sup>A:r`I], thirty [t3:r`I],

turtle [ˈtʰɜːr̩l̩].

The glottal stop (or the glottal plosive, as it is also referred to) is more common in British English (especially in London Cockney) than in American English. In this Course we will study it only as an allophone of /t/ in the following contexts:

a. between a stressed vowel and an unstressed one, as  
in butter [ˈbʊt̩ə], fatter [ˈfæt̩ə], kitty [ˈkɪt̩i].

b. between a stressed vowel and a syllabic consonant,  
as in bitten [ˈbɪt̩n̩], eaten [ˈiːt̩n̩], fatten [ˈfæt̩n̩],  
bottle [ˈbɒt̩l̩], little [ˈlɪt̩l̩].

c. word-finally, usually before other consonants, as in Eat quickly [ˈiːkwiːkly],  
eight books [eɪt bʊks].

Of /k/:

a) [kʰ] (strongly aspirated `k`):

a.1. syllable-initially, before a stressed vowel, as in camera [ˈkʰæmɹə], came [kʰeɪm], cane

[kʰeɪn], cancel [ˈkʰænsəl], capable [ˈkʰeɪp(ə)bəl],  
cape [kʰeɪp], capital [ˈkʰæp(ə)təl], capitol  
[ˈkʰæp(ə)təl], carrot [ˈkʰærət], carry  
[ˈkʰærɪ], chaos [ˈkeɪʃ], character  
[ˈkʰærəktər], chemical [ˈkʰemɪkəl], chorus  
[ˈkʰɒrəs], comb [kʰəm], come [kʰʊm], coffee  
[ˈkʰɔːfɪ], comfort [ˈkʰʌmfɜːt], company  
[ˈkʰʌmp(ə)ni], consul [ˈkʰɒnsəl], council  
[ˈkʰʌnsəl], counsel [ˈkʰʌnsəl], cover [ˈkʰʌvər],  
curry [ˈkʰɜːri], Kansas [ˈkʰænzəs], Kay [kʰeɪ],  
key [kʰiː], king [kʰɪŋ], kiss [kʰɪs], kitten  
[ˈkʰɪtn̩], quay [kʰiː]; accompany [əˈkʰʌmp(ə)ni],  
accomplish [əˈkʰʌmp(ə)lɪʃ], according [əˈkʰɒːrɪŋ],  
account [əˈkʰʌʊnt], acoustic [əˈkʰuːstɪk],  
became [bɪˈkʰeɪm], become [bɪˈkʰʊm], because  
[bɪˈkʰɒz], Buchanan [bʊˈkʰænən], Descartes  
[ˌdɒeɪˈkʰɑːrt], economy [ɪˈkʰɒnəmi], encounter  
[ɪnˈkʰʌʊntər], encourage [ɪnˈkʰɜːrɪdʒ], en-

couragement [ɪnˈkʰɜːrɪdʒmənt], gynecology  
[ˌdʒɪnɪˈkʰɒlədʒi], mechanic [mɪˈkʰænɪk],  
psychology [ˌsaɪkʰɒlədʒi], record [rɪˈkʰɔːrd],  
succumb [səkʰʌm].

a.2. before /l,r,j,w/, forming syllable-initial

clusters with them (REMEMBER that in this case strong aspiration is not indicated but devoicing of the liquid or the semi-vowel): [kʰl-] as in chloride [ˈkʰlɔːraɪd], chlorophyll [ˈkʰlɔːrɪfɪl], class [kʰlɑːs], claim [kʰleɪm], clean [kliːn], clear [kʰleə], clerk [kʰɜːrk], clever [ˈkʰleɪvər], climb [klaɪm], clock [kʰlɒk], close (v.) [kʰləʊz], clothes [kʰləʊz], cloud [klaʊd], club [kʰlʌb]; [kʰr-] as in chronic [ˈkʰrɒnɪk], cracker [ˈkʰrækər], crazy [ˈkʰreɪzi], cream [kʰreɪm], crown [kʰraʊn], cry [kʰraɪ], decrease [dɪˈkʰreɪs], increase [ɪnˈkʰreɪs] (n.) or [ɪnˈkʰreɪs] (v.), secret [ˈsiːkʰrət], secretary [ˈsekʰrətɪəri]; [kʰj-] as in Cuba [ˈkʰjuːbə], cube [kʰjuːb], Cupid [ˈkʰjuːpɪd], curable [ˈkjʊərəbəl], curator [kjʊˈreɪər], cue [kjʊː], curiosity [ˌkjʊərɪˈæːsətɪ], cute [kjʊːt], queue [kjʊː]; [kʰw-] as in earthquake [ˈɜːrθkʰweɪk], equal [ɪˈkwɔːl], equation [ɪˈkwɔːʃn], equipment [ɪˈkwɪpmənt], frequent [ˈfriːkwənt], quail [kwɔːl], quality [ˈkwɔːləti], quarrel [ˈkwɔːrəl], quarter [ˈkwɔːtər], Quebec [kwɔːˈbeɪk], queen [kwɪːn], quench [kwɛntʃ], question [kwɛstʃən], quiet [kwɪət], quite [kwɪt], quiver [ˈkwɪvər], request [rɪˈkwɛst].

b) [kʰ] (weakly aspirated `k`):

b.1. before unstressed vowels, as in bacon

[ˈbeɪkən], command [kʰɛmənd], hiccough [ˈhɪkəp], lucky [ˈlʌk], pocket [ˈpɒkɪt], second [ˈsekənd], ticket [ˈtɪkɪt], turkey [ˈtʰɜːrkɪ].

b.2. word-finally: (after vowels) as in ache[e\Ik()],  
 bake [b\0e\Ik()], black [b\0l\ak()], break [b\0re\Ik()],  
 chalk[t\s\ok()], duck[d\0\uk()], headache[\`he`\,e\Ik()],  
 knock [n\A:k()], joke [d\0\_\(\z\_\)\e\Uk()], lake [le\Ik()],  
 Let's talk [\`lets \5th\ok()], make [me\Ik()], quick  
 [kw\0\Ik()], speak [spi:k()], thick [\t\Ik()], think  
 [\t\Ink()], walk [w\ok()], yoke [j\e\Uk()]; (forming a  
 cluster with the preceding consonant) [-l\~k()]  
 as in bulk [b\0\ul\~k()], milk [m\l\l\~k()], silk [s\l\l\~k()];  
 [-nk()] as in blank [b\0l\ank()], drunk [d\0r\unk()],  
 link[l\l\Ink()], monk [m\u\nk()], pink [p<sup>h</sup>\l\Ink()], rank  
 [r\ank()], thank [t\ank()], tank [t<sup>h</sup>\ank()]; [-rk()]  
 as in ark [\A:rk()], bark [b\0\A:rk()], cork  
 [k<sup>h</sup>\O:rk()], fork[f\O:rk()], lark [l\A:rk()], pork  
 [p<sup>h</sup>\O:rk()], work [w\3:rk()]; [-sk()] as in ask  
 [\ask()], brusque [b\0r\usk()], dusk [d\0\usk()], risk  
 [r\Isk()].

b.3. before vowels with secondary accent, as in  
 complication [\,k(\A:mp\l\0e\k<sup>h</sup>e\l\sn\,)], intercom  
 [\Int(\er\,k(\A:m)].

c. [k] (unaspirated `k):

c.1. after /s/, forming a syllable-initial cluster with it: [sk-] as in scale [ske\l\l~],  
 scarf

[sk\A:rf], scare [sk\E\er], scatter [\`sk\`a`\er],  
 schedule [\`sked\z\U\l~], scheme [ski:m], scholar  
 [\`sk\A:l\er], school [sku:l\l~], scold [sk\0e\U\l~d\0],  
 score[sk\O:r], scorn[sk\O:rn], scourge [sk\3:rd\0\_\(\z\_\)],  
 scout [sk\A\Ut()], sculpture[\`sk\`u\l~pt\`s\er], skeleton  
 [\`skel\etn\,], sketch [sket\s], skull [sk\`u\l~], sky  
 [ska\I]; [sk\l\0-] as in exclaim [\Ik\`sk\l\0e\Im],  
 sclerosis [sk\l\0e\`r\`e\Us\Is]; [sk\r\0-] as in scratch  
 [sk\r\0at\s], scrabble [\`sk\r\0ab\l~\,], scramble  
 [\`sk\r\0amb\l~\,], scrape [sk\r\0e\Ip()], scream [sk\r\0i:m],  
 screen [sk\r\0i:n], screech [sk\r\0i:t\s], scribble  
 [\`sk\r\0ib\l~\,], script [sk\r\0\Ipt()], scrub [sk\r\0\ub\0];

[skj\0-] as in excuse [Ik'skj\0u\z\0]; [skw\0-] as in squad [skw\0\A\:\d\0], squander [skw\0\A\:\nd\er], square [skw\0\E\er], squat [skw\0\A\:\t\], squeal [skw\0i\:\l\~], squeeze [skw\0i\:\z\0], squirrel [skw\0\3\:\r\e\l\~].

- c.2. before syllabic (dark) `l', as in buckle [b\0\uk\l\~\,], Michael [ma\Ik\l\~\,], physical [f\Iz\ek\l\~\,], tackle [t\h\ak\l\~\,].
- c.3. before a nasal (except word-final), as in acknowledge [ek\n\A\:\Id\0\_\(\z\_\)], black magic [b\0l\ak\5m\ad\z\Ik\], dark night [d\0\A\:\rk\5na\It\].
- c.4. before affricates, as in black chalk [b\0l\ak\5t\ok\], deckchair [d\0ek,t\s\E\er], quick change [kw\0\Ik\5t\se\Ind\0\_\(\z\_\)].
- c.5. word-internally: (before word-final consonants forming clusters with them): [-kt\] as in act [akt\], fact [f\akt\], kicked [k\h\Ikt\], lacked [l\akt\], picked [p\h\Ikt\]; [-ks] as in ax [aks\], bulks [b\0u\l\~ks], fix [f\Iks], marks [m\A\:\rks], risks [r\Iks], sinks [s\l\~nks], thanks [t\h\ank\], thinks [t\h\ank\], works [w\3\:\rks]; (before non-final plosives) as in blackboard [b\0l\ak,b\0\O\:\rd\0], thick paste [t\h\Ik\5p\h\e\Ist\].

Of /g/:

a) [g] (fully voiced `g'):

- a.1. between vowels, as in again [e\gen], ago [e\g\e\U], August [og\est\], began [b\0\I\g\an], begin [b\0\I\g\In], beginner [b\0\I\g\In\er], beginning [b\0\I\g\In\In], beggar [b\0eg\er], begging [b\0eg\In], bigger [b\0Ig\er], biggest [b\0Ig\Ist\], cigar [s\I\g\A\:\r], eager [i\:\g\er], hugging [h\ug\In], magazine [m\ag\e\zi\:\n], regard [r\I\g\A\:\rd\0], sugar [s\Ug\er], wagon [w\ag\en].
- a.2. word-internally: (in contact with other voiced consonants) as in agree [e\gri\:], big jaw [b\0\Ig\]

[\d\z\o], exact [\Ig\z\akt{}], exaggerate  
[\Ig\z\ad\z\e\re\It{}], exam [\Ig\z\am], example  
[\Ig\z\amp\l\~\,], executive [\Ig\zekj\et{}\Iv\0], exist  
[\Ig\z\Ist{}], forget [f\er\get{}], organ[\O\rg\en],  
recognize [\rek{}(eg),na\Iz\0], rugby [\r\ugb\I];  
(before word-final /d/ and /z/, forming  
clusters with them) [-gd\0] as in begged[b\0egd\0],  
drugged [d\0r\ugd\0], flogged [f\l\0\ogd\0], plugged  
[p\l\0\ugd\0], tagged [t^h\agd\0]; [-gz\0] as in bags  
[b\0\agz\0], digs [d\0\Igz\0], eggs [egz\0], pigs [p^h\Igz\0],  
rugs [r\ugz\0].

a.3. before lateral (syllabic\0 or nonsyllabic), as  
in bugle[\b\0ju:g\l\~\,], glow [gl\e\U], legal[\li:g\l\~\,],  
struggle [st\r\0\ug\l\~\,], ugly [\ug\l\I].

a.4. before nasals, as in A big man [e\b\Ig\5m\an],  
dogma [d\0\ogm\e], drag-net [d\0r\ag\net{}], ignore  
[\Ig\n\O:r], quagmire [kw\0\ag\ma\ler], signal  
[s\Ign\l\~\,].

\0

b) [g] (partially devoiced `g'):

b.1. word-initially:\0 (before vowels) as in gain  
[g\0e\In], gave [ge\0\Iv\0], garden [\g\A\rdn\,], guard  
[g\A\rd\0\0], gay [ge\I],\0 girl [g3:r\l\~\,],\0 good [g\Ud\0],  
go\one [g\on], guess [ges], guilty [\g\I\l\~\t{}\I], gum  
[g\um]; (before /l/ and /r/, forming clusters  
with them) as in glade[gl\0e\ld\0], glance [gl\ans],  
glean [gl\0i:n], glide [gl\ld\0], gloom [glu:m],  
glottal \0[gl\A\:\l\~\,],\0 glove[gl\uv\0], glut\0ton[gl\utn\,],  
gl\oue [glu:]; [gr-]\0 as in grass [gr\as], grade  
[gr\0e\ld\0], graduate[\gr\ad\z\U\It{}] (n\0. and adj.) or  
[\gr\ad\z\U,e\It{}] (v.), grate [gre\I\0t{}], grease  
[g\Ori:s], great [gre\It{}], grin [gr\In], grope  
[g\0r\e\Up{}], group[gru:p{}], ground [gr\A\Und\0], grow  
[gr\e\U].

b.2. word-final\0y (usually \0completely d\0evoiced), \0as  
in bug [b\0\ug], dog [d\0\og], fog [f\A:g], hug[h\ug],  
keg [k^h\eg], mug [m\ug], rag [r\ag], tug [t^h\ug].



- b.3. in contact with voiceless consonants (either word-internal or at word boundaries), as in  
bagpipe [ˈbæɡpʰaɪp], big chin [ˈbɪɡtʃɪn],  
eggcup [ˈegkʌp], wagtail [ˈwæɡteɪl].

Of /f/:

[f] in all word positions:

a) Word-initially:

- a.1. before vowels, as in fable [ˈfeɪbəl], fabric  
[ˈfæbrɪk], facial [ˈfeɪʃəl], factory [ˈfæktəri],  
faint [feɪnt], fair [fɛər], faith [feɪt], fail  
[feɪl], failure [ˈfeɪlɪər], fake [feɪk], fall  
[fɔːl], false [fɔːls], fame [feɪm], family  
[ˈfæməli], familiar [fəˈmɪliər], fancy [ˈfænsi],  
fare [fɛər], farmer [ˈfɑːrmər], farther  
[ˈfɑːrdər], fashion [ˈfæʃn], fasten [ˈfæsn],  
father [ˈfɑːdər], fault [fɔːlt], favor  
[ˈfeɪvər], favorite [ˈfeɪvərɪt], fear [fɛər],  
feather [ˈfeðər], feature [ˈfi:tʃər], fee [fi:],  
feedback [ˈfiːd,bæk], fellow [ˈfeləʊ], fetus  
[ˈfiːvəs], fever [ˈfiːvər], fiddle [ˈfɪdl],  
field [fiːld], fifty [ˈfɪftɪ], figure [ˈfɪɡər]  
(AmE) [ˈfɪɡe] (BrE), file [faɪl], filter  
[ˈfɪltər], final [ˈfaɪnəl], find [faɪnd], finger  
[ˈfɪŋɡər], finish [ˈfɪnɪʃ], finite [ˈfaɪnɪt],  
first [fɜːrst], five [faɪv], fixed [fɪkst],  
foil [fɔɪl], folk [fɛlk], fond [fɔːnd], fool  
[fuːl], forecast [ˈfɔːrkʌst] (n.), foresee  
[ˌfɔːrˈsi:], foretell [ˌfɔːrˈteɪl], foreword  
[ˈfɔːrwɜːd], forbid [fərˈbɪd], forget  
[fərˈɡet], forgive [fərˈɡɪv], former  
[ˈfɔːrmər], fortune [ˈfɔːrtʃən], fortunately  
[ˌfɔːrtʃənɪtli], forward [ˈfɔːrwɜːd], foster  
[ˈfɔːstər], fought [fɔt], foul [faʊl], found  
[faʊnd], fountain [ˈfaʊntn], full [fʊl], fun  
[fʌn], function [ˈfʌŋkʃn], fund [fʌnd], funny  
[ˈfʌni], furnace [ˈfɜːrnəs], furniture  
[ˈfɜːrnɪtʃər], further [ˈfɜːrdər], Pharaoh  
[ˈferəʊ], pharmacy [ˈfɑːrməsi], pharynx

[ˈfɑrɪŋks], phase [feɪz], phenomenon  
[fiˈeɪnəːməˌnɒzi], philosophy [fiˈlɒsəfi],  
Philip [ˈfɪlɪp], photograph [ˈfɒtəˈɡrɑːf],  
photography [fɒtəˈɡræfɪ], physician [fiˈzɪʃn],  
physical [ˈfɪzɪkəl], physicist [ˈfɪzɪsɪst],  
physics [ˈfɪzɪks].

a.2. before /l,r,j/, forming clusters with them:

[flɒ-], as in flag [flæɡ], flame [fleɪm], flannel  
[ˈflænl̩], flea [fli:], flee [fli:], flew [flu:],  
fly [flaɪ], flirt [flɜːrt], float [fləʊt],  
flood [flʊd], floor [flɔːr], flour [flaʊr],  
flourish [ˈflaʊrɪʃ], flower [ˈflaʊər], flu  
[flu:], flown [fləʊn], fluent [ˈfluːənt], flunk  
[flʌŋk], flush [flʊʃ]; [frɒ-], as in fracture  
[ˈfræktʃər], fragrance [ˈfrægrəns], frail  
[frɛɪl], frame [freɪm], fraud [frɒd], freeze  
[friːz], frequent [ˈfriːkwənt], Friday  
[ˈfrɪdaɪ], friend [frɛnd], fright [fraɪt],  
front [frʌnt], frown [fraʊn], frozen [frɒzn],  
fruit [fru:t], frustration [ˌfrʌsˈtreɪʃn],  
phrase [frɛz], phrasal [ˈfrɛzəl]; [fjɒ-], as  
in few [fju:], fewer [ˈfjuːər], fuel [fjuːəl],  
fugitive [ˈfjuːdʒətɪv], furious [ˈfjʊrɪəs],  
fury [ˈfjʊrɪ], fuse [fjuːz], fusion [ˈfjuːzən],  
future [ˈfjuːtʃər].

b) Between vowels, as in afford [əˈfɔːrd], before  
[bʌɪˈfɔːr], chauffeur [ˈʃoʊfɪər], coffee [ˈkɒfi],  
difficult [ˈdɪfɪk(ə)l], effort [ˈɛfɜːt], graphic  
[ˈɡræfɪk], laughing [ˈlɑːfɪŋ], offend [əˈfend], offer  
[ˈɒfər], office [ˈɒfɪs], often [ˈɒfən], prefer  
[pɪˈrɒfɜːr], profit [ˈprɒfɪt], refer [rɪˈfɜːr], sofa  
[ˈsɒfə], telephone [ˈteləˈfɒn].

c) Word-internally, in contact with other consonants,  
as in after [ˈɑːftər], breakfast [ˈbrekfəst],  
briefly [ˈbrɪflɪ], comfort [ˈkɒmfɜːt], comfortable  
[ˈkɒmfəˈtəb(ə)l] or [ˈkɒmfɪˈtəb(ə)l], confidence  
[ˈkɒnfɪdəns], different [ˈdɪf(ə)rənt], orphan  
[ˈɔːrfən], perfect [ˈpɜːrfɪkt] (adj.) [pɜːˈfekt]  
(v.), surface [ˈsɜːfɪs].

d) Word-finally:

d.1. after vowels, as in autograph [ˈɒːɡrəf], beef

[bʰoɪ:f], brief [bʰrɪ:f], calf [kʰɹaf], chief  
[tʰsi:f], cough [kʰɒf], cuff [kʰʌf], deaf [dʰeɪf],  
enough [ɪˈnʌf], half [hɹaf], knife [naɪf], laugh  
[lɹaf], leaf [li:f], life [laɪf], loaf [lʰeʊf],  
paragraph [ˈpʰɑrəˈgrɹaf], roof [rʌf], rough  
[rʌf], stuff [stʌf], tough [tʰʌf], telegraph  
[tʰeləˈgrɹaf].

d.2. after other consonants, forming clusters with

them: [-l~f] as in elf [eɪl~f], golf [gɒl~f], gulf  
[gʌl~f], herself [hɜrˈseɪl~f], himself [hɪmˈseɪl~f],  
myself [maɪˈseɪl~f], Ralph [rɹɹl~f], shelf [ʃeɪl~f],  
wolf [wʌl~f], yourself [jʌrˈseɪl~f]; [-Mf] as in  
nymph [nɪMf], triumph [ˈtrɒɹɹMf]; [-rf] as in  
dwarf [dʰwɒːrf].

e) Before word-final consonants, forming clusters with them: [-ftʰ] as in coughed  
[kʰɒftʰ], craft [krɒftʰ], draft [drɒftʰ], gift [gɪftʰ], laughed [lɹaftʰ], left  
[leftʰ], puffed [pʰʌftʰ], raft [rɹaftʰ]; [-fs] as  
in coughs [kʰɒfs], chiefs [tʰsi:fs], handkerchiefs  
[ˈhɹɹnkɜrtʰsɪfs], laughs [lɹafs], photographs  
[ˈfɹeɪˈgrɹafs], paragraphs [ˈpʰɑrəˈgrɹafs]; [-ft] as  
in fifth [fɪft], twelfth [twʰeɪl~ft].

f) Before syllabic (dark) `l', as in baffle [ˈbɒɹɹl̩],  
muffle [ˈmʌfɹl̩], raffle [ˈrɹɹl̩], shuffle [ˈʃʌfɹl̩].

g) After /s/, forming a syllable-initial cluster with it, as in sphere [sfɹer], sphincter  
[ˈsfɹɹnktɜr], sphynx [sfɹɹnks].

Of /v/:

a) [v] (fully voiced `v'):

a.1. between vowels, as in clever [ˈkɹlʰevɜr], flavor  
[ˈfɹlʰeɪvɜr], govern [ˈgʌvɜrn], heavy [ˈhevɹ],  
leaving [ˈli:vɹɹn], living [ˈlɹɹvɹɹn], moving  
[ˈmu:vɹɹn], over [ˈevɜr], paving [ˈpʰeɪvɹɹn],

river [ˈrɪvər].

a.2. after some voiced consonants, as in canvas [ˈkʰɑːmvs], Culver [ˈkʰuːlvər], evening [ˈiːvnɪŋ],

invite [ɪnˈvaɪt()], nervous [ˈnɜːrvəs], service [ˈsɜːrvɪs].

a.3. before word-final /z/ and /d/, forming clusters with them: [-vd] as in behaved [bəˈheɪvd], believed [bɪˈliːvd], curved [kʰɜːrvd], deceived [dɪˈsiːvd], involved [ɪnˈvɔːld], live [lɪvd], loved [lʊvd], moved [muːvd], paved [peɪvd], proved [prəʊvd], saved [seɪvd], shaved [seɪvd], solved [sɔːld], waved [weɪvd], waived [weɪvd]; [vz] as in behaves [bəˈheɪvz], believes [bɪˈliːvz], caves [keɪvz], curves [kʰɜːrvz], deceives [dɪˈsiːvz], drives [draɪvz], hives [haɪvz], involves [ɪnˈvɔːlvz], lives [lɪvz], loves [lʊvz], paves [peɪvz], proves [pruːvz], revolves [rɪˈvɔːlvz], saves [seɪvz], shaves [seɪvz], shelves [ʃelˈvz], solves [sɔːlvz], waves [weɪvz], waives [weɪvz].

a.4. before syllabic dark `l', as in civil [ˈsɪvəl], devil [ˈdɪvəl], evil [ˈiːvəl], level [ˈlevəl], swivel [ˈswɪvəl], travel [ˈtrɛvəl].

a.5. before syllabic nasal, as in even [ˈiːvn], heaven [ˈhevn], Kevin [ˈkevn], seven [ˈsevn], Stephen [ˈstiːvn].

b) [v] (partially devoiced):

b.1. word-initially, as in vacation [vəˈkeɪʃn], vacuum [ˈvækjʊəm], valley [ˈvæli], vain [veɪn], value [ˈvæljʊ], variety [vəˈraɪəti], various [vəˈrɪəs], vary [ˈvɛəri], vegetable [ˈvɛdəbəl], vehicle [ˈviːkəl], veil [veɪl], vein [veɪn], verb [vɜːrb], verse [vɜːrs], very [ˈvɛəri].

vessel [v\0es\l~\], victory [v\0\Ikt'r\0\I], view [v\0ju:],  
village [v\0\II\ld\0\_\(\z\_\)], violet [v\0a\Iel\It^], violin  
[v\0a\Iel\In], virgin [v\0\3:rd\z\en], virus [v\0a\Ir'es],  
visit [v\0\Iz\It^], vocabulary [v\0\ek^h\abj\el,ler\I],  
voiced [v\0\O\Ist^], voiceless [v\0\O\Isl\Is], vote  
[v\0\elUt^], vowel [v\0\A\U\el~], voyage [v\0\O\Ild\0\_\(\z\_\)].

b.2. word-finally (usually completely devoiced):

after vowels, as in above [e\b\uv\0], brave  
[b\0re\Iv\0], cave [k^he\Iv\0], drive [d\0ra\Iv\0], drove  
[d\0r\el\Uv\0], \0five [fa\Iv\0], give [g\Iv\0], gave [ge\Iv\0],  
glove [gl\uv\0], grave [gre\Iv\0], have [h\av\0], hive  
[ha\Iv\0], leave [li:v\0], live [l\Iv\0] (v.) [l\A\Iv\0]  
(adj. & adv.), love [l\uv\0], move [mu:v\0], of [\A:v\0]  
or [\ov\0] or [\uv\0] or [\ev\0], save [se\Iv\0], shave  
[se\Iv\0], slave [s\l\0e\Iv\0], stove [st\el\Uv\0], wave  
[we\Iv\0], waive [we\Iv\0]; after consonants, forming  
clusters with them: [-l~v\0] as in absolve  
[eb\z\A:l~v\0], involve [In\v\A:l~v\0], revolve  
[r\I\v\A:l~v\0], solve [s\A:l~v\0], twelve [tw\0e\l~v\0];  
[-rv\0] as in curve [k^h\3:rv\0], serve [s\3:rv\0],  
swerve [sw\0\3:ev\0].

b.3. In contact with voiceless consonants, as in I

have to go [a\I'h\av\0 t^e\5g\el\U], Live happily [l\Iv\0  
5h\ap^(\II\I], My last vacation [ma\I \t\ast  
v\0\el5k^he\I\sn\,].

Of /t/:

[t] in all word positions:

a) Word-initially:

a.1. before vowels, a\0s in thank [t\ank^], thanks-  
giving [,\t\ank's\g\Iv\In], thaw [t\o], theft  
[teft^], thief [ti:f], theology [t\I\^A:l\ed\z\I],  
theory [t\I\er\I], theater [t\I\e\er], thermometer  
[t\er'm\A:m\et^er], thick [t\Ik^], thicken  
[t\Ik^en], thimble [t\Imb\l~\,], thin [t\In], thing  
[t\In], third [t\3:rd\0], thirsty [t\3:rst\I],  
thorough [t\3:r\el\U], tho\ought [t\ot^], thousand

[ˈtʰʌzdeɪ], thug [tʰʌg], thunder [ˈtʰʌndər],  
Thursday [ˈtʰɜːzdeɪ].

a.2. before /r,w/, forming clusters with them:

[tʰr-] as in thread [tʰred], threat [tʰret],  
threaten [ˈtʰretn], three [tʰriː], threw [tʰruː],  
thrifty [ˈtʰɪftɪ], thrill [tʰrɪl], thrive  
[tʰraɪv], throat [tʰroʊt], through [tʰruː],  
throw [tʰroʊ], thrown [tʰroʊn], thrust [tʰʌst];  
[tw-] as in thwart [tʰwɔːrt], thwack [tʰwæk].

b) between vowels, as in anything [ˈenɪŋ], author  
[ˈɔːtər], authority [ˈɔːrɪtɪ], cathedral  
[kæθɪdrəl], ether [ˈiːtər], everything  
[ˈevriθɪŋ], method [ˈmeθəd], nothing [ˈnʌŋ],  
sympathy [ˈsɪmpəθɪ].

c) word-internally, in contact with other consonants,  
as in arithmetic [əˈrɪθmɪtɪk], athletic  
[əˈtliθlɪk], bathroom [ˈbɑːtʃrʌm], catholic  
[kæθəlɪk], filthy [ˈfɪliθ], healthy [ˈheəlθ],  
mathematics [ˌmæθəˈmæts], wealthy [ˈweəlθ], worth-  
less [ˈwɜːrθlɪs].

d) word-finally:

d.1. after vowels, as in bath [bɑːt], beneath  
[bɪˈneɪt], both [bɔːt], breath [breɪt], cloth  
[klɒt], death [deɪt], faith [feɪt], fortieth  
[ˈfɔːrθiɪt], mouth [maʊt] (n.), path [pæθ],  
sheath [ʃiːt], sooth [suːt], south [saʊt],  
truth [tʰruːt], thirtieth [ˈtʰɜːrθiɪt], twen-  
tieth [ˈtwɛnθiɪt], with [wɪt] (AmE), youth  
[juːt].

d.2. after other consonants, forming clusters with  
them: [-d] as in breadth [bredθ], hundredth  
[ˈhʌndrɪdθ], width [wɪdθ]; [-f] as in fifth  
[fɪftθ]; [-l] as in filth [fɪlθ], health [heəlθ];  
[-r] as in berth [bɜːrθ], birth [bɜːrθ],  
birthday [ˈbɜːrθdeɪ], earth [ɜːrθ], forth  
[fɔːrθ], fourth [fɔːrθ], north [nɔːrθ], worth  
[wɜːrθ]; [-l~f] as in twelfth [twɛlθ].

- e. before word-final /s/, forming a cluster with it:  
[-\ts] as in breaths [b\0re\ts], cloths [k\l\0\o\ts], deaths  
[d\0e\ts], moths [m\o\ts], myths [m\I\ts], paths [p<sup>h</sup>a\ts];  
[-f\ts] as in fifths [f\If\ts]; [-l\~f\ts] as in twelfths  
[tw\0e\l\~f\ts]; [-n\ts] as in months [m\un\ts], ninths  
[na\In\ts], sevenths[\sevn\,\ts], tenths[t<sup>h</sup>en\ts]; [-r\ts]  
as in berths [b\0\3\:\r\ts], earth's [\3\:\r\ts], fourths  
[f\0\:\r\ts].

Of /d/:

a) [d] (fully voiced `th):

- a.1. between vowels, as in another [e'n\u\der],  
breathing [b\0ri:\d\In], brother [b\0r\u\der],  
either [i:\d\er] (AmE) [a\I\d\er] (BrE), father  
[f\A:\d\er], feather [fe\d\er], gather [g\ad\er],  
lather [l\ad\er], leather [le\d\er], mother  
[m\u\der], other [u\der], southern [s\u\dern],  
weather [we\d\er], whether [we\d\er], within  
[w\I\d\In], without [w\I\d\A\Ut<sup>h</sup>], worthy [w\3\:\r\d\I].
- a.2. between a vowel and other voiced consonants,  
as in although [,\o\l\~\d\e\U], bathed [b\0e\I\dd\0],  
bathes [b\0e\I\dz\0], breathed [b\0ri:\dd\0], breathes  
[b\0ri:\dz\0], rhythm [r\I\dm\,], smoothed [sm\0u\:\dd\0],  
smooths [sm\0u\:\dz\0], soothed [su\:\dd\0], soothes  
[su\:\dz\0], teethed [thi:\dd\0], teethes [thi\:\dz\0].

b) [d\0] (partially devoiced `th):

- b.1. word-initially, as in than [d\0an], that [d\0at<sup>h</sup>],  
the [d\0i:], thee [d\0i:], their [d\0E\er], them  
[d\0em], themselves [d\0em\se\l\~vz\0], then [d\0en],  
these [d\0i:z\0], there [d\0E\er], therefore  
[\d\0E\er,f\O:r], they [d\0e\I], they're [d\0E\er],  
thine [d\0a\In], this [d\0Is], those [d\0e\Uz\0], thou  
[d\0A\U], though [d\0e\U], thus [d\0us], thy [d\0a\I].
- b.2. word-finally, as in bathe [b\0e\I\d\0], breathe  
[b\0ri:\d\0], clothe [k\l\0\e\U\d\0], lathe [le\I\d\0], lithe  
[la\I\d\0], mouth [m\A\U\d\0] (v.), see the [si\:\d\0],  
sheathe [si\:\d\0], smooth [sm\0u\:\d\0], soothe [su\:\d\0],

scythe [saɪd\0], teethe [tʰi:\d\0], tithes [tʰaɪd\0],  
with[wɪd\0] (BrE), wreath[ri:\d\0], writhe [raɪd\0].  
(NOTE that most of these words end in -e.)

b.3. in contact with voiceless consonants, as in

Put the map there [ˈpʰʊt d\0e ˈmæp \5d\0E\er], Take  
the narrow path [ˈtʰeɪk d\0e ˈnær\əU \5pʰæt].

Of /s/:

[s] in all word positions:

a) Word-initially:

a.1. before vowels, as in cease [si:s], ceiling

[ˈsi:lɪn], center [ˈsen\er], certain  
[ˈsɜ:rtn\,], circle [ˈsɜ:rkɪl\~\,], circus  
[ˈsɜ:rkɪs], city [ˈsɪ\ɪ], sacrifice  
[ˈsækrɪ\,faɪs], sad [səd\0], safe [seɪf],  
safety [ˈseɪftɪ\ɪ], said [sed\0], sailor  
[ˈseɪl\er], saint [seɪnt\], salad [ˈsæləd\0],  
salary [ˈsæl\erɪ], salt [sɔ:l\~t\], same [seɪm],  
sample [ˈsæmpəl\~\,], sandpaper [ˈsænd\pæp\er],  
sang [sæŋ], satan [ˈseɪtn\,], satellite  
[ˈsætə\l\], sauce [sɔs], saw [sɔ], say  
[seɪ], says [sez\0], sea [si:], search  
[sɜ:rtʃ], seashore [ˈsi:\,sɔ:r], science  
[ˈsaɪns], second [ˈsek\end\0], secret  
[ˈsi:k\ret\0], see [si:], seek [si:k\], seen  
[si:n], select [sɪˈlekt\], sequence  
[ˈsi:kw\ens], sergeant [ˈsɜ:rdz\ent\], silly  
[ˈsɪlɪ], sign [saɪn], sight [saɪt\], sing  
[sɪŋ], soap [seɪp\], social [ˈseɪʃəl\~\,],  
society [səˈsaɪət\ɪ], soft [sɔft\], sold  
[sɔld\0], soldier [ˈsɔldz\er], solid  
[ˈsɒlɪd\0], some [sʌm], something [ˈsʌm\θɪŋ],  
son [sʌn], song [sɒŋ], sorrow [ˈsɔ:r\ə],  
sound [saʊnd\0], soup [su:p\], source [sɔ:rs],  
sovereign [ˈsɔvrɪn], sword [sɔ:rd\0], subject  
[ˈsʌbdz\ekt\] (n.) [sɪb\ˈdʒekt\] (v.), succeed  
[sɪk\ˈsi:d\0], success [sɪk\ˈses], suck [sʌk\],  
sufficient [səˈfɪʃnt\], suicide [ˈsu:ɪd\],  
suit [su:t\], suitable [ˈsu:tə\bl\], summer



[sʌmər], sun[sʌn], Sunday [ˈsʌndə], supper  
[sʌpər], surprise [sʌrˈpraɪz], suspect  
[sɪˈspekt] (v.) [ˈsʌspekt], symbol  
[ˈsɪmbəl], syntax [ˈsɪntəks].

- a.2. before other consonants, forming clusters with them: [sj-] (especially BrE) as in suit [sju:t], suitable [ˈsju:təbəl]; [sk-] as in skate[skeɪt], scheme[ski:m], skirt [skɜ:rt], school [sku:l], skin [skɪn], sky [skaɪ]; [skj-] as in excuse [ɪkˈskju:z]; [skl-] as in exclaim [ɪkˈskleɪm], sclerosis [sklɔːlɪˈreɪʃ]; [skr-] as in scream [skri:m], screen [skri:n], scrape [skreɪp], scratch [skrætʃ], screw [skru:]; [skw-] as in square [skwɛər], squeeze [skwi:z], squirrel [ˈskwɜ:rl]; [sl-] as in sleep [sli:p], sleeve [sli:v], slice [sɪs], slip [slɪp], slight [slaɪt], slow [sləʊ], sly [slaɪ]; [sm-] as in small [smɔ:l], smell [smel], smile [smɪl], smoke [sməʊk], smooth [smu:ð]; [sn-] as in snake [sneɪk], sneeze [sni:z], snore [snɔ:r], snow [snəʊ]; [sp-] as in speak [spi:k], sparkle [ˈspɑ:rkəl], space [speɪs], spare [spɛər], speed [spi:d], spill [spɪl], spoil [spɔɪl], poon [pu:n], spindle [ˈspɪndəl]; [spj-] as in spurious [ˈspjʊəriəs]; [spl-] as in splash [splʌʃ], splendid [ˈsplɛndɪd], splice [splɔ:ɪs], splinter [ˈsplɪntər], split [splɪt]; [spr-] as in spray [spreɪ], sprang [sprʌŋ], spread [spreɪd], spring [sprɪŋ], sprinkle [ˈsprɪŋkl], sprite [sprɪt]; [st-] as in stake [steɪk], star [stɑ:r], stay [steɪ], steady [ˈsteɪ], steak [steɪk], steal [sti:l], steam [sti:m], steel [sti:l], stomach [ˈstʌmək], stone [steɪn], study[ˈstʌdi]; [stj-] (esp. BrE) as in student [ˈstju:dnt], studio [ˈstju:diə], stupendous [ˌstju:ˈpɛndəs]; [str-] as in stranger [ˈstreɪndʒər], straight [streɪt], stream [stri:m], street [stri:t], strength [ˈstreɪŋt], strike [streɪk], string [strɪŋ], stroke [stroʊk], struggle [ˈstrʌgl].

b) between vowels, as in bicycle [ˈbɪkəl], decide [dɪˈsaɪd], disappoint [ˌdɪsəˈpɔɪnt], eraser [ɪˈreɪsər], essential [ɪˈsenʃl], essay [ˈeseɪ], massage [mæˈsɑːʒ], message [ˈmesɪdʒ], passage [ˈpɑːsɪdʒ], possible [ˈpɒsəbəl], recent [ˈriːsnt], receive [rɪˈsiːv], saucer [ˈsɔːsər].

c) word-internally, in contact with other consonants,  
as in answer [ˈɑːnsər], asleep [əˈsliːp], basket [ˈbɑːskɪt], Christmas [ˈkrɪsməs], disgusted [dɪˈgʌstəd], disturb [dɪˈstɜːrb].

d) word-finally:

d.1. after vowels, as in decrease [dɪˈkriːs], discuss [dɪˈskʌs], dress [dres], face [feɪs], famous [ˈfeɪməs], house [haʊs] (n.), juice [dʒuːs], less [les], loose [luːs], mass [mæs], niece [niːs], piece [piːs], practice [ˈpræktɪs], produce [ˈprɒdʊːs] (v.) [ˈprɒdʒuːs] (n.), purpose [ˈpɜːrps], reduce [rɪˈduːs], surface [ˈsɜːrfɪs], voice [vɔɪs].

d.2. after consonants, forming clusters with them:  
[-ks] as in breaks [breɪks], box [bɒks], clocks [klɒks], fix [fɪks], looks [lʊks], makes [meɪks], mix [mɪks], packs [pæk], six [sɪks], trucks [trʌks]; [-kst] as in fixed [fɪkst], mixed [mɪkst], text [tekst];  
[-ksts] as in texts [teksts]; [-l~s] as in else [els], false [fɔːls], pulse [pʌls]; [-ns] as in dance [dɑːns], once [wʌns], ounce [aʊns], patience [ˈpeɪnəns], rinse [rɪns], science [ˈsaɪəns], since [sɪns]; [-pɔs] as in copes [kəps], cups [kʌps], groups [gruːps], steps [steps], stops [stɒps]; [-ts] as in cats [kæts], eats [iːts], fits [fɪts], hats [hæts], mates [meɪts]; [-l~ks] as in bulks [bʌks], milks [mɪlks]; [-l~ps] as in helps [helps];

[-mps] as in bumps[bʊm̩ps], dumps[dʌʊm̩ps], pumps [pʰʊm̩ps]; [-mpts] as in exempts [ɪgˈzɛm̩pts], prompts[pʁʌʊm̩pts]; [-nks] as in thanks[θæŋks], thinks [θɪŋks], tanks [tæŋks]; [-rs] as in course [kɔːrs], force [fɔːrs], horse [hɔːrs], nurse [nɜːrs], worse [wɜːrs]; [-rps] as in carps [kɑːrps], warps [wɔːrps]; [-rts] as in hearts [hɑːrts], hurts [hɜːrts]; [-sks] as in asks [æsk], desks [dɛsk], masks [mæsk], risks [rɪsk], tasks [tæsk]; [-sts] as in costs [kɔːst], guests [gɛst], lists [lɪst], rests [rɛst], tests [tɛst]; [-ts] as in berths [bɜːrts], eighths [eɪt̩s], fourths [fɔːrts], months [mʌnt̩s], tenths [tɛnt̩s], twelfths [twɛlf̩t̩s].

e) before syllabic (dark) `l', as in castle [ˈkɑːsl̩], muscle [ˈmʌs̩l̩], parcel [ˈpɑːrsl̩], pencil [ˈpɛns̩l̩], whistle [ˈwɪsl̩].

f) before syllabic `n', as in christen [ˈkrɪʃn̩], fasten [ˈfɑːsn̩], glisten [ˈglɪsn̩], hasten [ˈheɪsn̩], lesson [ˈlesn̩], listen [ˈlɪsn̩].

### Of /z/:

a) [z] (fully voiced `z'):

a.1. between vowels, as in busy [ˈbɪzɪ], buzzard [ˈbʌzəd], desert [ˈdɛzət], dessert [dɛzət], easy [ˈiːzi], hesitate [ˈhezɪt], lazy [ˈleɪzi], lizard [ˈlɪzəd], noisy [ˈnɔɪzi], possessive [pɒzɪv], razor [ˈreɪzər], scissors [ˈsɪzəz], thousand [ˈθaʊzənd], trousers [ˈtraʊzəz], visit [ˈvɪzɪt].

a.2. word-internally, in contact with other voiced consonants, as in business [ˈbɪznɪs], closed [kloʊzd], cosmetic [kɒsmɛtɪk], exact [ɪgˈzækt], exaggerate [ɪgˈzædʒeɪt], exam [ɪgˈzæm].

[ɪgˈzʌm], example [ɪgˈzʌmpəl̩], husband  
[ˈhʌzbʌnd], observe [əbˈzɜːrv], palsy [ˈpɑːl̩z̩],  
pansy [ˈpʰʌnz̩], raised [reɪzd], used [juːzd],  
Wednesday [ˈwenzdeɪ].

a.3. before syllabic dark `l', as in dazzle [ˈdʌzəl̩],  
measles [ˈmiːzəl̩], nasal [ˈneɪzəl̩], puzzle  
[ˈpʰʌzəl̩].

a.4. before syllabic `n', as in chosen [ˈtʃoʊzn̩],  
cousin [ˈkʰʌzn̩], doesn't [ˈdʌznt̩], hasn't  
[ˈhʌznt̩], isn't [ˈɪznt̩], pleasant [ˈpleɪzn̩],  
present [ˈpreznt̩] (n. & adj.), prison [ˈprɪzn̩],  
reason [ˈriːzn̩], season [ˈsiːzn̩].

b) [z] (partially devoiced `z):

b.1. word-initially, as in zeal [ziːl̩], zero  
[ˈziːrə], zinc [zɪŋk], zipper [ˈzɪpər],  
zodiac [ˈziːədiːk], zone [zəʊn], zoo [zuː],  
Xavier [ˈziːvɪər], xylophone [ˈziːləfəʊn].

b.2. word-finally (usually completely devoiced):  
(after vowels) as in close [kloʊz̩] (v.),  
clothes [kloʊz̩], choose [tʃuːz̩], does [dʌz̩],  
has [hʌz̩], is [ɪz̩], laws [lɔːz̩], lose [luːz̩],  
Ms [mɪz̩], news [nuːz̩], noise [nɔɪz̩], please  
[pliːz̩], praise [praɪz̩], raise [reɪz̩], rose  
[riːz̩], says [sez̩], was [wʌz̩], wise [waɪz̩];  
(after other consonants, forming clusters with  
them): [-bz̩] as in cabs [kʰʌbz̩], mobs [mɔbz̩],  
tribes [traɪbz̩]; [-dz̩] as in beds [bedz̩],  
clouds [klaʊdz̩], needs [niːdz̩], reads [riːdz̩],  
sides [saɪdz̩]; [-gz̩] as in bags [bʌgz̩], digs  
[dɪgz̩], pigs [pɪgz̩], tags [tʰʌgz̩]; [-l̩z̩] as  
in calls [kʰɔl̩z̩], feels [fiːl̩z̩], holes  
[həʊl̩z̩], pools [pʰuːl̩z̩], tools [tuːl̩z̩], travels  
[ˈtrʌvəl̩z̩], troubles [ˈtrʌbəl̩z̩]; [-mz̩] as in  
climbs [klaɪmz̩], combs [kʰɛʊmz̩], dreams  
[driːmz̩], seems [siːmz̩], slums [slʌmz̩]; [-nz̩]  
as in bans [bʌnz̩], buns [bʌnz̩], coins [kʰɔɪnz̩],  
pains [peɪnz̩], rains [reɪnz̩], runs [rʌnz̩].

spoons [spuːnz]; [-nz] as in belongs [bɒlɪŋz],  
brings [brɪŋz], kings [kɪŋz], lungs [lʌŋz],  
sings [sɪŋz], tongues [tʌŋz], wings [wɪŋz];  
[-rɪz] as in cars [kɑːrɪz], cares [keɪrɪz], doors  
[dɔːrɪz], ears [ɪərɪz], pears [peəz], pours  
[pɔːrɪz], stores [stɔːrɪz]; [-vɪz] as in behaves  
[bɪˈheɪvz], curves [kɜːrvz], doves [dɒvz],  
loves [lʌvz], receives [rɪˈsiːvz]; [-lɪdz] as  
in builds [bɪldz], fields [fiːldz], molds  
[mɒldz]; [-ndz] as in finds [faɪndz], friends  
[frɛndz], minds [maɪndz], pounds [paʊndz];  
[-rdz] as in cards [kɑːrdz], cords [kɔːrdz].

b.3. in contact with voiceless consonants, as in He

has to come today [hæz tʊ kʌm tʊdeɪ],  
Rise quickly [raɪz kwɪklɪ].

Of /s/:

[s] in all word positions:

a. Word-initially:

a.1. before vowels, as in chamois [ʃæmə], champagne  
[ʃæpəˈheɪn], chancre [ʃæŋk(ə)], chaperone  
[ʃæp(ə)ˈrɔːn], charade [ʃæˈreɪd], charlatan  
[ʃæˈrɪlətn̩], chauvinism [ʃəʊvɪnɪz(əm)], chef  
[ʃef], chemise [ʃemɪˈz], Chevrolet  
[ʃevrɪˈleɪ], Chicago [ʃɪˈkɑːgə], chute  
[ʃuːt], shade [ʃeɪd], shadow [ˈsɔːdɔʊ], shake  
[ʃeɪk], shall [ʃəl], shallow [ˈʃæləʊ], shame  
[ʃeɪm], shampoo [ʃæmˈpuː], shape [ʃeɪp],  
share [ʃeə], shark [ʃɑːrk], shave [ʃeɪv],  
shawl [ʃɔːl], she [ʃiː], shear [ʃɪər], sheath  
[ʃiːθ], sheep [ʃiːp], sheet [ʃiːt], Sheila  
[ʃiːlə], shell [ʃel], shelter [ˈʃel(ə)t(ə)],  
shepherd [ˈʃep(ə)d], shield [ʃiːld], shift  
[ʃɪft], shine [ʃaɪn], ship [ʃɪp], shirt  
[ʃɜːrt], shiver [ˈʃɪv(ə)], shock [ʃɔːk], shoe  
[ʃuː], shook [ʃʊk], shoot [ʃuːt], shop  
[ʃɔːp], shoplifter [ˈʃɔːplɪft(ə)], shore  
[ʃɔːr], short [ʃɔːrt], shortchange

[ˈsɔːrt,tseɪndʌ(z\_)], shortcoming [ˈsɔːrt,kʌmɪŋ],  
shorten [ˈsɔːrtɪn], shorthand [ˈsɔːrt,hænd],  
shortsighted [ˈsɔːrt,sɑɪdɪd], should [ʃʊd],  
shoulder [ˈʃeʊlɪdər], shout [ʃaʊt], shove [ʃʊv],  
shovel [ˈʃʊvəl~], show [ʃeʊ], showcase  
[ˈʃeʊ,k(e)ɪs], show-off [ˈʃeʊ,ɔf], showroom  
[ˈʃeʊ,rʊm], shuffle [ˈʃʊfl~], shun [ʃʊn], shut  
[ʃʊt], shy [ʃaɪ], sugar [ˈʃʊgər], sure  
[ʃʊər], surely [ˈʃʊərlɪ].

a.2. before other consonants, forming clusters with

them: [rʌ-] as in shrank [ʃræŋk], shred  
[ʃred], shrewd [ʃruːd], shrimp [ʃrɪmp], shrink  
[ʃrɪŋk], shrub [ʃrʊb], shrug [ʃrʊg], shrunk  
[ʃrʌŋk]; [swʌ-] as in schwa [ʃwə].

b. Between vowels, as in ashes [æʃz], ashore [eɪʃɔːr],

associate [eɪsəʊsɪeɪt] (v.) [eɪsəʊsɪeɪt] (n.),  
assure [eɪʃʊər], bishop [ˈbɪʃɪp], brushes  
[ˈbrʊʃɪz], crochet [ˈkroʃeɪ], delicious  
[dɪlɪʃəs], dishes [ˈdɪʃɪz], finishes [ˈfɪnɪʃɪz],  
flashes [ˈflæʃɪz], Joshua [ˈdʒʊʃə], machine  
[məˈʃiːn], parachute [ˈpærəʃuːt], precious  
[ˈpreʃəs], punishes [ˈpʊnɪʃɪz], rushes [ˈrʊʃɪz],  
seashore [ˈsiːʃɔːr], washing [ˈwɒʃɪŋ], wishes  
[ˈwɪʃɪz].

c. Word-internally:

c.1. in contact with other consonants, as in

anxious [æŋkʃəs], [æstɹoʊeɪ], conscious  
[ˈkɒnʃəs], dictionary [ˈdɪkʃənəri], insur-  
ance [ɪnʃʊəns], pressure [ˈpreʃər], sexual  
[ˈseksʊəl].

c.2. before syllabic (dark) `l', as in commercial

[kəˈmɜːrɪəl~], facial [ˈfeɪʃəl~], financial  
[fɪˈnænʃəl~], initial [ɪˈnɪʃəl~], official  
[eɪˈfɪʃəl~], potential [pəˈtɛnʃəl~], racial  
[ˈreɪʃəl~], social [ˈseɪʃəl~], spatial [ˈspeɪʃəl~],

special [ˈspeɪsəl̩].

- c.3. before syllabic `n', as in action [ˈækʃn̩], admission [ədˈmɪʃn̩], ancient [ˈeɪʃn̩t̩], cushion [ˈkʰʊʃn̩], emotion [ɪˈmɪʃn̩], examination [ɪgˌzæmɪˈneɪʃn̩], fashion [ˈfæʃn̩], ignition [ɪgˈneɪʃn̩], mansion [ˈmæʃn̩], mention [ˈmenʃn̩], mission [ˈmɪʃn̩], musician [ˌmjuːzɪʃn̩], nation [ˈneɪʃn̩], national [ˈnæʃn̩əl̩], ocean [ˈeɪʃn̩], patience [ˈpeɪʃn̩s], patient [ˈpeɪʃn̩t̩], permission [p(ɛrˈmɪʃn̩)], position [p(ɛzɪʃn̩)], Russian [ˈrʊʃn̩], vacation [vəˈkeɪʃn̩], version [ˈvɜːʃn̩].

- c.4. before word-final /t/, forming a cluster with it, as in cashed [kʰæst̩], crashed [krʌst̩], crushed [krʌʊst̩], fished [fɪst̩], finished [ˈfɪnɪst̩], flushed [flʌst̩], polished [ˈpʰɔːlɪst̩], punished [ˈpʰʌnɪst̩], pushed [pʰʊst̩], rushed [rʊst̩], vanished [ˈvʌnɪst̩], washed [wʌst̩], wished [wɪst̩].

d. Word-finally:

- d.1. after vowels, as in ash [aʃ], banish [ˈbʌnɪʃ], bush [bʊʃ], cash [kʰæʃ], crash [krʌʃ], dash [dʌʃ], dish [dɪʃ], English [ˈɪŋɡlɪʃ], fish [fɪʃ], flash [flʌʃ], flesh [flesh], gosh [gɔːʃ], hush [huʃ], mesh [meʃ], moustache [məˈsteɪʃ], polish [ˈpʰɔːlɪʃ], punish [ˈpʰʌnɪʃ], push [pʰʊʃ], rash [ræʃ], rush [rʊʃ], Spanish [ˈspæʃnɪʃ], vanish [ˈvʌnɪʃ], wash [wʌʃ], wish [wɪʃ].

- d.2. after other consonants, forming clusters with them, as in harsh [hɔːrʃ], marsh [mɔːrʃ], Welsh [welʃ].

Of /z/:

- a. [z] (fully voiced):

a.1. Between vowels, as in anesthesia [ˌænəˈsiːzi], Asia [ˈeɪzi], audiovisual [ˌɒlɪˈvɪzʊəl], azure [ˈɑːzər], casual [ˈkæzʊəl], casualty [ˈkæzʊəl-t(ɪ), closure [ˈkloʊzər], composure [k(ə)mˈpəʊzər], erasure [ɪˈreɪzər], exposure [ɪkˈspəʊzər], glazier [ˈgleɪzər], leisure [ˈliːzər] (AmE) [ˈleɪzər] (BrE), massages [m(e)sˈʌːzɪz], measure [ˈmeɪzər], pleasure [ˈplɛʊzər], seizure [ˈsiːzər], treasure [ˈtrɛʊzər], usual [ˈjuːzʊəl], usually [ˈjuːzʊəl], visual [ˈvɪzʊəl].

a.2. Word-internally: (before syllabic `n`) as in  
allusion [eˈluːzn], cohesion [k(e)ˈhiːzn], collision [k(e)ˈlɪzn], confusion [k(en)ˈfjuːzn], corrosion [k(e)ˈrɪʊzn], decision [d(ə)ˈɪsɪzn], defusion [d(ə)ˈfjuːzn], division [d(ə)ˈvɪzn], elision [ɪˈlɪzn], equation [ɪˈkwəʊzn], erosion [ɪˈrɪʊzn], exclusion [ɪkˈsklʊːzn], fusion [ˈfjuːzn], illusion [ɪˈluːzn], inclusion [ɪnˈkluːzn], intrusion [ɪnˈtrʊːzn], invasion [ɪnˈveɪzn], lesion [ˈliːzn], occasion [eˈkeɪzn], persuasion [p(ə)ˈswəʊzn], plosion [ˈplɔʊzn], provision [p(r)ɔʊˈvɪzn], revision [rɪˈvɪzn], supervision [ˈsuːp(ə)ˈvɪzn], television [ˈtɪveɪʊzn], trans-  
fusion [ˌtrʌnsˈfjuːzn], vision [ˈvɪʊzn]; (before word-final /d/, forming a cluster with it) as in  
massaged [m(e)sˈʌːzd], rouged [ruːzd].

b. [z] (partially devoiced):

b.1. Word-initially (in words of French origin; not very common in English) as in geôdarme [ˈzɑːn,dɑːrm], genre [ˈzɑːnrə], gigue [ˈziːg].

b.2. Word-finally (only in words of French origin; often replaced by /dʒ/) as in beige [ˈbeɪʒ], col-  
lage [k(e)ˈlɑːʒ], corsage [ˌk(ə)ˈrɔːsɑːʒ], garage [ˈgɑːrɑːʒ] or [ˈgɑːrɪʒ] (more commonly pronounced [ˈgɑːrɑd(ə)ʒ] or [ˈgɑːrɑːd(ə)ʒ]), prestige [ˌpreʒiːʒ] (or [ˌpreʒiːd(ə)ʒ]), mirage [ˈmɪrɑːʒ], rouge [ruːʒ].

**Allophones of /h/:**



a) [h] (fully voiceless `h'): it occurs word-initially

a.1. before vowels, as in habit [ˈhæbɪt], habitual [həˈbɪtəl], Hades [ˈheɪdɪz], hail [heɪl], hair [hɛər], half [hɑːf], hammer [ˈhæmər], handicap [ˈhændɪkəp], handout [ˈhændaʊt], handwriting [ˈhændraɪnɪŋ], hanger [ˈhæŋər], hare [hɛər], hasten [ˈheɪsn̩], hatred [ˈheɪtər], hay [heɪ], headphone [ˈhedəʊfəʊn], heart [hɑːrt], heed [hiːd], helmet [ˈhelɪmɪt], Hercules [ˈhɜːrkjʊleɪz], hereby [ˌhɪərɪˈbaɪ], hero [ˈhɪrəʊ], herpes [ˈhɜːrɪpɪz], hesitate [ˈhezɪteɪt], hierarchy [ˈhaɪəˌrɑːrkiː], hinder [ˈhɪndər] (v.) [ˈhaɪndər] (adj.), hint [hɪnt], history [ˈhɪstəri], hoarse [hɔːrs], hobby [ˈhɒbi], holdup [ˈhəʊlɪdʌp], Holmes [həʊmz], homage [ˈhɒmɪdʒ], homesick [ˈhəʊsɪk], homework [ˈhəʊmwɜːrk], homogeneous [ˌhəʊmɪˈdʒiːniəs], honey [ˈhʌni], hoof [hʊf], horse [hɔːrs], housewife [ˈhaʊswaɪf], humble [ˈhʌmbəl], hunter [ˈhʌntər], hurry [ˈhʌrɪ], hygiene [ˈhaɪdʒiːn], hygienic [ˌhaɪdʒiˈenɪk], hymen [ˈhaɪmən], hyphen [ˈhaɪfən], hypothesis [ˌhaɪpəˈθæzɪs], who [huː], whole [həʊl], whom [huːm], whore [hɔːr], whose [huːz].

a.2. before /j/, as in Houston [ˈhjuːstən], huge [hjuːdʒ], Hughes [hjuːz], human [ˈhjuːmən], humane [ˌhjuːˈmeɪn], humid [ˈhjuːmɪd], humiliate [ˌhjuːˈmɪɪeɪt], humor [ˈhjuːmər], humorous [ˌhjuːˈmɜːrəs].

a.3. before /w/ (especially in AmE), as in whale [hweɪl], what [hwæt], whatever [hwəˈevər], wheat [hwiːt], wheel [hiːl], when [hwɛn], whenever [hwɛnˈevər], where [hwɛər], wherever [hwɛərˈevər], whereby [hwɛərɪˈbaɪ], whether [ˈhwɛðər], which [hwɪtʃ], whichever [ˌhwɪtʃˈevər], while [hwaɪl], whim [hwɪm], whirl [hwɜːl], whisky [ˈhwɪskɪ], white [hwaɪt].

NOTE: The words in (a.3) are more often pronounced with /w/ only, as in whale [weɪl̩], what [wʌ:t̩], which [wɪt̩s], etc.

b) [h] (partially voiced ʰ): It occurs between voiced sounds:

b.1. between vowels, as in ahead [əˈhed], a hill [eɪhɪl̩], anyhow [ˈenɪ,həʊ], behalf [bɪhəˈf], behave [bɪˈheɪv], behind [bɪˈhaɪnd], behoove [bɪˈhu:v], boyhood [ˈbɔɪ,hʊd], two hundred [ˈtuːhʌndrəd].

b.2. after voiced consonants, as in abhor [əbˈhɔ:r], adhere [ədˈhɪər], forehead [ˈfɔ:r,hed], inhabitant [ˌɪnhəˈbɪtənt̩], manhood [ˈmæn,hʊd], perhaps [pəˈhæps], spearhead [ˈspiər,hed].

Of /t̩s/:

[t̩s] in all word positions:

a) Word-initially, as in chain [t̩seɪn], chair [t̩sɛər], chairman [ˈt̩sɛrmən], chalk [t̩sɔk̩], challenge [ˈt̩sæl̩nd̩(ɹ̩)], chamber [ˈt̩seɪmbər] chance [t̩sʌns], change [t̩seɪnd̩(ɹ̩)], channel [ˈt̩sʌnəl̩], chaplain [ˈt̩sʌpl̩n], chapter [ˈt̩sʌpt̩ər], charge [t̩sʌːrd̩(ɹ̩)], chariot [ˈt̩sʌrɪət̩], Charles [t̩sʌːrɪz̩], chase [t̩seɪs], chasten [ˈt̩seɪsn̩], cheap [t̩si:p̩], cheat [t̩si:t̩], checker [ˈt̩sek̩ər], cheek [t̩si:k̩], cheerful [ˈt̩sɪf̩l̩], cheque [t̩sek̩], cheese [t̩si:z̩], chessboard [ˈt̩sesbɔːrd̩], chestnut [ˈt̩sesn̩ət̩], chew [t̩su:], chicken [ˈt̩sɪk̩ən], chief [t̩si:f̩], child [t̩saɪl̩d̩], childbirth [ˈt̩saɪl̩d̩bɜːrt̩], childhood [ˈt̩saɪl̩d̩hʊd̩], children [ˈt̩sɪl̩dr̩ən], chilly [ˈt̩sɪl̩ɪ], chimney [ˈt̩sɪmn̩ɪ], chimpanzee [t̩sɪmˈpʰʌnzɪ], China [ˈt̩saɪn̩e], Chinese [ˈt̩saɪniːz̩], chisel [ˈt̩sɪz̩l̩], chocolate [ˈt̩sʌːkl̩ət̩], choice [t̩sɔɪs], choke [t̩seʊk̩], choose [t̩su:z̩], chop [t̩sʌ:p̩], chosen [ˈt̩seʊzn̩], chow [t̩sʌʊ], chubby [ˈt̩sʌbɪ], Chuck [t̩sʌk̩], chunk [t̩sʌŋk̩], church [t̩sɜːrt̩s], Czech [t̩sek̩], Tchaikovsky [t̩saɪˈkʰɔvskɪ].

b) Word-internally:

b.1. between vowels, as in attaches [e'tʰatʰs\Iz\0],  
beaches [b\0i:t\s\Iz\0], bitches [b\0It\s\Iz\0], butcher  
[b\0Ut\s\er], catcher [kʰat\s\er], catches  
[kʰat\s\Iz\0], coaches [kʰeUt\s\Iz\0], ditches  
[d\0It\s\Iz\0], furniture [f\3:rn\et\s\er], future  
[fj\0u:t\s\er], itches [It\s\Iz\0], kitchen  
[kʰIt\s\en], literature [l\I\er\et\s\er], matches  
[m\at\s\Iz\0], natural [n\at\s\er\el~], nature  
[neIt\s\er], peaches [pʰi:t\s\Iz\0], pitcher  
[pʰIt\s\er], pitches [pʰIt\s\Iz\0], preacher  
[p\r\0i:t\s\er], preaches [p\r\0i:t\s\Iz\0], reaches  
[ri:t\s\Iz\0], Richard [r\It\s\erd\0], riches  
[r\It\s\Iz\0], righteous [ra\It\s\es], ritual  
[r\It\s\U\el~], roaches [r\eUt\s\Iz\0], scratches  
[sk\r\0at\s\Iz\0], speeches [spi:t\s\Iz\0], spiritual  
[sp\Ir\It\s\U\el~], teacher [tʰi:t\s\er], teaches  
[tʰi:t\s\Iz\0], temperature [tʰempr\et\s\er],  
touches [tʰut\s\Iz\0], watches [w\A:t\s\Iz\0], witches  
[w\It\s\Iz\0].

b.2. in contact with other consonants, as in actual  
[akt\s\U\el~], actually [akt\s\U\elI], adventure  
[ed\vent\s\er], archer [A:rt\s\er], bachelor  
[b\0at\s\I\er], belching [b\0e\I~t\s\I\en], celestial  
[s\el\est\s\I~.], century [sent\s\erI], Christian  
[k\r\0Ist\s\en], churches [t\s\3:rt\s\Iz\0], combustion  
[k\em\b\ust\s\en], departure [d\0\I\pʰ\A:rt\s\er],  
factual [fakt\s\U\el~], fortune [f\O:rt\s\en],  
fortunate [f\O\0:rt\s\en\It], gesture [d\0\_(\z\_)est\s\er],  
grandchild [gr'an,t\sa\I\~d\0], hunches [h\unt\s\Iz\0],  
launches [l\ont\s\Iz\0], lecture [lekt\s\er],  
luncheon [l\unt\s\en], pasture [pʰast\s\er],  
picture [pʰ\Ikt\s\er], posture [pʰ\A:st\s\er],  
question [kw\0est\s\en], Rachel [re\It\s\I~.],  
researcher [r\I\z\3:rt\s\er], searches [s\3:rt\s\Iz\0],  
suggestion [seg\d\zest\s\en], virtue [v\0\3:rt\s\U].

b.3. before word-final /-t/ (=ed), forming a cluster with it, as in attached [e'tʰatʰst],

coached [k<sup>h</sup>e\Ut\st(], itched [It\st(], launched [l\ont\st(], marched [m\A\rt\st(], pitched [p<sup>h</sup>It\st(], preached [p\r\Oi:t\st(], reached [ri:t\st(], searched [s\3\rt\st(], scratched [sk\r\Oat\st(], touched [t<sup>h</sup>ut\st(], watched [w\A:t\st(].

c. Word-finally

c.1. after vowels, as in attach [e\th\at\s], beach [b\Oi:t\s], catch [k<sup>h</sup>\at\s], coach [k<sup>h</sup>e\Ut\s], ditch [d\OIt\s], each [i:t\s], itch [It\s], match [m\at\s], much [m\ut\s], peach [p<sup>h</sup>i:t\s], pitch [p<sup>h</sup>It\s], preach [p\r\Oi:t\s], reach [ri:t\s], rich [rIt\s], roach [r\Ue\Ut\s], scratch [sk\r\Oat\s], speech [spi:t\s], such [s\ut\s], teach [t<sup>h</sup>i:t\s], touch [t<sup>h</sup>ut\s], watch [w\A:t\s], witch [wIt\s].

c.2. after consonants, as in arch [A\rt\s], belch [b\Oe\l~t\s], birch [b\O3\rt\s], bunch [b\Ount\s], church [t\s3\rt\s], hunch [h\unt\s], launch [l\ont\s], lunch [l\unt\s], march [m\A\rt\s], porch [p<sup>h</sup>\O\rt\s], search [s\3\rt\s].

Of /d\z/:

a) [d\z] (fully voiced): word-internally

a.1. between vowels, as in agency [e\Id\z\ens\I], agent [e\Id\z\ent(], adjacency [e\d\ze\Isn\s\I], adjacent [e\d\ze\Isn,t(], adjectival [,\ad\z\Ik\th\Iv\l~\,], adjective [,\ad\z\Ikt\Iv\O], adjoin [e\d\z\O\In], adjourn [e\d\z\3\rn], adjunct [,\ad\z\u\nt(], adjust [e\d\z\ust], advantages [ed\v\ant\Id\z\Iz\O], ages [e\Id\z\Iz\O], badges [b\O\ad\z\Iz\O], bandages [b\O\and\Id\z\Iz\O], biology [,\b\Oa\I\A:l\ed\z\I], bridges [b\O\rd\Id\z\Iz\O], cages [k<sup>h</sup>e\Id\z\Iz\O], colleges [k<sup>h</sup>A:l\Id\z\Iz\O], courageous [k(e\re\Id\z\es],

damages [ˈdʌmɪdʒz], edges [ˈedʒz], encourages  
[ɪnˈkʰɜːrɪdʒz], engages [ɪnˈgeɪdʒz], gradual  
[ˈgrʌdʒUəl~], graduate [ˈgrʌdʒU,et̩] (v.)  
[ˈgrʌdʒUIt̩] (n. or adj.), imagine [ɪˈmædʒɪn],  
judges [ˈdʒʌdʒz], languages [ˈlæŋgwɪdʒz],  
major [ˈmeɪdʒer], manages [ˈmænɪdʒz],  
marriages [ˈmæriɪdʒz], massages [ˈmæsɪdʒz],  
messages [ˈmesɪdʒz], original [ˌɒrɪdʒənəl~],  
packages [ˈpækɪdʒz], pages [ˈpeɪdʒz],  
pigeon [ˈpiʒɪn], project [ˈprɒʃekt̩] (n.)  
[ˈprɒʃekt̩] (v.), region [ˈriːdʒən], religion  
[rɪˈlɪdʒən], schedule [ˈskedʒUəl~], stages  
[ˈsteɪdʒz], villages [ˈvɪlɪdʒz], wages  
[ˈweɪdʒz].

a.2. in contact with other voiced consonants, as in

angel [ˈeɪŋdʒl~], arranges [əˈreɪndʒz], barges  
[ˈbɜːrdʒz], bulges [ˈbʊlɪdʒz], changes  
[ˈtʃeɪndʒz], charges [ˈtʃɑːrdʒz], cudgel  
[ˈkʰʊdʒl~], danger [ˈdæŋdʒer], dangerous  
[ˈdæŋdʒerəs], encouragement [ɪnˈkʰɜːrɪdʒm̩ent̩],  
engagement [ɪnˈgeɪdʒm̩ent̩], enlargement  
[ɪnˈlɑːrdʒm̩ent̩], engine [ˈendʒɪn], enjoy  
[ɪnˈdʒɔɪ], grandeur [ˈgrændʒer], injection  
[ɪnˈdʒekt̩sn̩], judgment [ˈdʒʌdʒm̩ent̩], lounges  
[ˈlʌŋdʒz], margarine [ˈmɑːrdʒerɪn], margin  
[ˈmɑːrdʒən], object [ˈɔːbdʒekt̩] (n. or adj.)  
[ˈɛbˌdʒekt̩], ranger [ˈreɪndʒer], sergeant  
[ˈsɜːrdʒent̩], soldier [ˈsɔːlɪdʒer], stranger  
[ˈstrʌŋdʒer], subject [ˈsʌbdʒekt̩] (n.)  
[ˈsɛbˌdʒekt̩] (v.), suggest [sɪˈdʒest̩],  
surgeon [ˈsɜːrdʒən], surgery [ˈsɜːrdʒerɪ],  
syringes [sɪˈrɪndʒz], virgin [ˈvɜːrdʒən],  
Virginia [vɜːrɪˈdʒɪniə].

a.3. before word-final /-d/ (= -ed), forming a

cluster with it, as in aged [eɪdʒd], bridged  
[brɪdʒd], changed [tʃeɪndʒd], charged  
[tʃɑːrdʒd], damaged [ˈdæmɪdʒd], discouraged  
[dɪsˈkʰɜːrɪdʒd], encouraged [ɪnˈkʰɜːrɪdʒd],

engaged [ɪnˈgeɪdʒd], exchanged [ɪksˈtʃeɪndʒd],  
judged [dʒʌdʒd], managed [ˈmænɪdʒd], paged  
[peɪdʒd], staged [steɪdʒd], urged [ɜːrdʒd].

b. [dʌ(z)]

b.1. Word-initially (partially devoiced), as in

gaol [dʌ(z)eɪl], general [ˈdʌ(z)enˈerleɪ], genesis  
[ˈdʌ(z)enəsɪs], genetic [dʌ(z)eɪˈneɪtɪk], Geneva  
[dʌ(z)eɪˈniːvə], genial [ˈdʌ(z)iːnɪleɪ], Gene [dʌ(z)iːn],  
genie [ˈdʌ(z)iːni], genital [ˈdʌ(z)enɪtəl], gentleman  
[ˈdʌ(z)enlɪːmən], gentlemen [ˈdʌ(z)enlɪːmən], genuine  
[ˈdʌ(z)enjʊɪn], Geoffrey [ˈdʌ(z)efrɪ], geography  
[dʌ(z)ɪˈʒɜːgrəfi], geometry [ˌdʌ(z)iːˈmɛtrɪ],  
Georgia [ˈdʌ(z)ɔːrdʒeɪ], German [ˈdʌ(z)ɜːrmən],  
Germane [dʌ(z)erˈmeɪn], giant [ˈdʌ(z)ɑːnt], gigantic  
[ˌdʌ(z)ɑːtɪˈɡæntɪk], gin [dʌ(z)ɪn], ginger [ˈdʌ(z)ɪndʒər],  
giraffe [dʌ(z)eɪˈræf], gypsy [ˈdʌ(z)ɪpsɪ], gym [dʌ(z)ɪm],  
gynecology [ˌdʌ(z)ɑːnɪˈkɒlədʒɪ], jacket  
[ˈdʌ(z)ækɪt], Jacob [ˈdʌ(z)eɪkəb], jail [dʌ(z)eɪl],  
jam [dʌ(z)æm], Jamaica [dʌ(z)eɪˈmeɪkə], James [dʌ(z)eɪmz],  
janitor [ˈdʌ(z)ænɪtər], January [ˈdʌ(z)ænjʊerɪ],  
Japan [dʌ(z)eɪˈpæn], jaw [dʌ(z)ɔː], jealous  
[ˈdʌ(z)eɪləs], Jeanne [dʌ(z)iːn], Jehova [dʌ(z)eɪˈhɛvə],  
jeopardize [ˈdʌ(z)ep(ə)ˈdɑːzɪ], Jesus [ˈdʌ(z)iːzəs],  
jewel [ˈdʌ(z)juːəl], job [dʌ(z)ɔːb], Job [dʌ(z)eɪb], Joe  
[dʌ(z)eɪ], Joel [ˈdʌ(z)eɪl], John [dʌ(z)ɔːn], join  
[dʌ(z)ɔːn], joke [dʌ(z)eɪk], Jones [dʌ(z)eɪnʒ], Joseph  
[ˈdʌ(z)eɪʒɪf], jot [dʌ(z)ɔːt], journal [ˈdʌ(z)ɜːrnəl],  
journey [ˈdʌ(z)ɜːrni], joy [dʌ(z)ɔː], judge [dʌ(z)ʌdʒdʌ(z)],  
Judith [ˈdʌ(z)uːdɪt], juice [dʌ(z)uːs], July [dʌ(z)eɪˈlaɪ],  
jump [dʌ(z)ʌmp], June [dʌ(z)uːn], jury [ˈdʌ(z)ʊrɪ],  
just [dʌ(z)ʌst], justice [ˈdʌ(z)ʌstɪs].

b.2. Word-finally (completely devoiced): (after

vowels), as in advantage [edvʌntədʒd], age  
[eɪdʒd], average [ˈævərɪdʒd], bandage [ˈbændʒd],  
beverage [ˈbɔːvərɪdʒd], bridge [brɪdʒd], cabbage  
[ˈkæbɪdʒd], cage [keɪdʒd], college [ˈkɒləɪdʒd],  
courage [ˈkɜːrɪdʒd], damage [ˈdʌmɪdʒd], edge

[ed\0\_(\z\_)], encourage [ɪn\kʰ3:r\ɪd\0\_(\z\_)], engage  
 [ɪn\ge\ɪd\0\_(\z\_)], fudge [fʊd\0\_(\z\_)], huge [hɟ\0u:d\0\_(\z\_)], judge  
 [d\0\_(\z\_)\ud\0\_(\z\_)], knowledge [n\A:l\ɪd\0\_(\z\_)], language  
 [l\ɑŋgw\ɪd\0\_(\z\_)], lodge [l\A:d\0\_(\z\_)], manage [m\an\ɪd\0\_(\z\_)],  
 marriage [m\ar\ɪd\0\_(\z\_)], package [pʰak\ɪd\0\_(\z\_)], page  
 [pʰe\ɪd\0\_(\z\_)], rage [re\ɪd\0\_(\z\_)], ridge [r\ɪd\0\_(\z\_)], sponge  
 [spʌnd\0\_(\z\_)], stage [ste\ɪd\0\_(\z\_)], village [v\0\ɪl\ɪd\0\_(\z\_)];  
(after consonants, forming clusters with them)  
 as in arrange [e're\ɪnd\0\_(\z\_)], barge [b\0\A:rd\0\_(\z\_)], bulge  
 [b\0\u\l~d\0\_(\z\_)], charge [t\s\A:rd\0\_(\z\_)], cottage [kʰ\A:l\ɪd\0\_(\z\_)],  
 dirge [d\0\3:rd\0\_(\z\_)], discharge [d\0\ɪs\ɪt\s\A:rd\0\_(\z\_)], forge  
 [f\0:rd\0\_(\z\_)], George [d\0\_(\z\_)\0:rd\0\_(\z\_)], large [l\A:rd\0\_(\z\_)],  
 orange [ɔ\A:r\ɪnd\0\_(\z\_)], purge [pʰ\3:rd\0\_(\z\_)], range  
 [re\ɪnd\0\_(\z\_)], strange [st\r\0e\ɪnd\0\_(\z\_)], surge [s\3:rd\0\_(\z\_)],  
 urge [3:rd\0\_(\z\_)].

**b.3. in contact with voiceless consonants, as in**

cottage cheese [kʰ\A:l\ɪd\0\_(\z\_)\,t\si:z\0], George  
 killed the cat [d\0\_(\z\_)\0:rd\0\_(\z\_)\kʰ\ɪl~d\de\5kʰ\at()],  
 Let's change subjects [lets\0\ts'e\ɪnd\0\_(\z\_)\  
 \5s\ubd\z\ɪkts], milkjug [m\ɪl~k,d\0\_(\z\_)\ug], Strange  
 fellows! [st\r\0e\ɪnd\0\_(\z\_)\5fel\e\Uz\0], vegetables  
 [v\0ed\0\_(\z\_)\t\eb\l~,\z\0].

**Allophones of /m/:**

a) [m] (fully voiced `m'). It occurs:

**a.1. Word-initially: (before vowels) as in Mabel**

[me\ɪb\l~,\], machine [me\si:n], madam [m\ɑ\em],  
 madden [m\adn,\], madhouse [m\ad\0,h\A\Us], magician  
 [me\d\z\ɪsn,\], magnet [m\agn\ɪt()], maid [me\ɪd\0],  
 mailbox [me\ɪl~,\,b\A:ks], maintain [m,me\ɪn\th'e\ɪn],  
 maintenance [me\ɪntn,\,ens], maize [me\ɪz\0], major  
 [me\ɪd\z'er], makeshift [me\ɪk,\s\ɪft()], manage  
 [m\an\ɪd\0\_(\z\_)], maneuver [me\ɪnu:v'er], manger  
 [me\ɪnd\z'er], manhood [m\anh\Ud\0], maniac  
 [me\ɪn\ɪ,\ak()], marble [m\A:rb\l~,\], margarine  
 [m\A:rd\z'er\ɪn], market [m\A:rk\ɪt()], marriage  
 [m\ar\ɪd\0\_(\z\_)], marvel [m\A:r\ɪv\l~,\], mascara  
 [mes\kʰ\ar'e], massage [me\s\A:d\0\_(\z\_)], masterpiece  
 [m\ast\er,p\i:s], Matthew [m\ɑt\ju:], mattress

[\m\at\r\0\Is], mayonnaise [\,me\I\e'ne\Iz\0], mayor  
 [\m\E\er], measles [\mi\z\I\~\,z\0], measure [\me\z\er],  
 meditate [\me'\e,t(e)It\], melancholy  
 [\mel'en,k(A:l\I], memory [\mem\er\I], mermaid [\m\3\r,me\Id\0], Meyer  
 [\ma\Ier], Michael [\ma\Ik\I\~\,], Midas [\ma\I'\es], midget [\m\Id\z\It\], mild  
 [m\A\I\I\~d\0], mind [ma\Ind\0], minus [\ma\In\es], minute [\m\In\It\] (n.) [\,ma\Inu:t\] (adj. =  
 small), mirror [\m\Ir\er], misleading [m\Is\li:\'\I\sn], missile [\m\Is\I\~\,], moisten [\m\O\Isn\,],  
 monarch [\m\A\:\n\erk\], Monday [\m\und\I], money [\m\un\I], morale [m\e'r\al\I\~\,], mother  
 [\m\U\d\er], mountain [\m\A\Untn\,], moustache [m\e'\st\as], multiple [\m\U\I\~t\ep\I\~\,],  
 munch [m\unt\s], murder [\m\3:\'\er], Murray [\m\3:r\I], muscle [\m\us\I\~\,], mushroom  
 [\m\U\sr\Um], mustn't [\m\usn\,t\], mysterious [m\I\st\Ir\I\es]; (before the semivowel /j/, forming  
 a cluster with it) as in municipal [\,mju:\'\n\Is\ep\I\~\,], museum [\,mju:\'\z\I\em], musician  
 [\mju:\z\Ik\], musician [\,mju:\'\z\I\sn\,], mutation [\,mju:\'\t<sup>h</sup>e\I\sn\,], mute [mju:t\], mutilate  
 [\mju:\'\I,\,e\It\], mutual [\mju:t\I\U\e\I\~\].

a.2. Word-internally: (between vowels) as in amoeba [\e'mi:b\e], among [\e'm\un],  
 amend [\e'mend\0], America [\e'mer'ek\(\e], chemical [\k<sup>h</sup>em'ek\I\~\,], common [\k<sup>h</sup>A\:\men],  
 demand [d\0\I'm\and\0], demon [\di:m'en], demonstrate [\d\0em'en\,st'r\0e\It\], enemy  
 [\en'em\I], familiar [f'e'm\Ij'er], hammer [\h'am'er], hammock [\h'am'ek\], imagine  
 [\I'm\ad\z\In], immediate [\I'mi:\'\I\et\], immense [\I'mens], Jamaica [d\0\_\(\z\_\)\e'me\Ik\(\e],  
 lemon [\lem'en], mommy [\m\A:m\I], mummy [\m\um\I], Pamela [p<sup>h</sup>am'el\e], plumber  
 [p\l\0m'er], pomade [p\(\e\U'me\Id\0], remind [r\I'ma\Ind\0], Simon [sa\Im'en], stammer  
 [st'am'er], Timothy [t<sup>h</sup>Im'e\I\], tummy [t<sup>h</sup>um\I]; (in contact with other consonants, without  
 forming clusters with them) as in accompany [\e'k<sup>h</sup>ump\en\I+, accomplice [\e'k<sup>h</sup>A\:\mp\I\0\Is],  
 accomplish [\e'k<sup>h</sup>A\:\p\I\0\Is], asthma [azm\e], chimney [t\I\mn\I], circumstance  
 [s\3:rk\emst'ens], December [d\0\I'semb'er], member [mem'ber], November  
 [\,n\U\ve'mb'er], remember [r\I'memb'er], September [\,sep't<sup>h</sup>emb'er]; (in contact with other  
 voiced consonants (esp. /j,r/), forming clusters with them) as in armpit [A\:\rm,p\(\It\], amuse  
 [\e'mju:\z\0], communication [k\(\e,mju:\n\e'k<sup>h</sup>e\I\sn\,], farmer [f'A:rm'er]; (before word-final  
 /t,d(= -ed),p,ps,pt,z(= -s,-es-'s), forming clusters with them) as in aimed [e\Imd\0], blamed  
 [b\0e\Imd\0], bombed [b\0\A:md\0], calmed [k<sup>h</sup>A:md\0], claimed [k\l\0e\Imd\0], climbed  
 [k\l\0a\Imd\0], condemned [k\(\en'demd\0], formed [f\O:rmd\0], harmed [h\A:rmd\0], jammed  
 [d\0\_\(\z\_\)\amd\0], seemed [si:md\0], succumbed [s\(\e'k<sup>h</sup>um\md\0]; bump [b\0\ump\], camp  
 [k<sup>h</sup>\amp\], damp [d\0\amp\], dump [d\0\ump\], jump [d\0\_\(\z\_\)\ump\], lamp [l\amp\], pump  
 [p<sup>h</sup>\ump\]; glimpse [gl\Imps], mumps [m\umps]; attempt [e't<sup>h</sup>empt\], exempt [Ig\zempt\],  
 prompt [p\r\0\A:mpt\]; aims [e\Imz\0], beams [b\0i:mz\0], bombs [b\0\A:mz\0], calms  
 [k<sup>h</sup>A\mz\0], claims [k\l\0e\Imz\0], climbs [k\l\0a\Imz\0], combs [k<sup>h</sup>e\Umz\0], comes  
 [k<sup>h</sup>\umz\0], films [f\I\I\~mz\0], forms [f\O:rzm\0], harms [h\A:rzm\0], rooms [ru:mz\0], warms



[w\O\rmz\0], worms [w\3\rmz\0]; (before syllabic (dark) `l) as in camel [k<sup>h</sup>am\l~\,], dismal [d\O\Izm\l~\,], family [f\am\l\,I], simultaneously [s\sa\Im\l~\,\t<sup>h</sup>e\In\l\es\I].

a.3. Word-finally: (after vowels) as in aim [e\Im], autumn [o\em], beam [b\oi:m], came [k<sup>h</sup>e\Im], come [k<sup>h</sup>um], damn [d\O\am], dumb [d\O\um], foam [f\e\Um], game [ge\Im], home [h\e\Um], Jim [d\O\\_(\z\\_)\Im], lame [le\Im], numb [n\um], room [ru:m], succumb [s\e\k<sup>h</sup>um], tomb [t<sup>h</sup>u:m], womb [wu:m]; (after /l,r/, forming clusters with them) as in arm [A\rm], dorm [d\O\O\rm], farm [f\A\rm], film [f\l\~m], form [f\O\rm].

b) [m\0] (partially devoiced `m'): after voiceless consonants (esp. after syllable-initial /s/, forming cluster with it, and after /p,t/) as in small [sm\0\o\l~], smart [sm\0\A\rt<sup>ç</sup>], smear [sm\0\I\er], smell [sm\0e\l~], smile [sm\0a\l\l~], Smith [sm\0\It], smoke [sm\0e\Uk<sup>ç</sup>], smooth [sm\0u\:\d\0], topmost [t<sup>h</sup>A:p,m\0e\Ust<sup>ç</sup>], utmost [ut,m\0e\Ust<sup>ç</sup>].

c) [m\,] (syllabic `m'): after fricatives and plosives, as in humanism [h\j\Ou:m\e,n\Izm\,], prism [p\r\O\Izm\,], rhythm [r\I\dm\,], Stop 'em [st\A:pm\,].

d) [M] (labiodentalized `m'): before /f,v/, as in amphitheater [a\mf\l,t\Ie\er], comfort [k<sup>h</sup>u\Mf\ert<sup>ç</sup>], comfortable [k<sup>h</sup>u\Mf\er\eb\l~\,] or [k<sup>h</sup>u\Mft<sup>ç</sup>(eb\l~\,], nymph [n\l\Mf], triumvirate [t,r\0a\l'u\Mv\Ir\It<sup>ç</sup>].

Allophones of /n/:

a) [n] (fully voiced `n'):

a.1. Word-finally: (before vowels) as in gnat [nat<sup>ç</sup>], gnaw [n\o], gnome [n\e\Um], knee [ni:], kneel [ni:l~], knife [na\If], knight [na\It<sup>ç</sup>], knock [n\A:k<sup>ç</sup>], knot [n\A:t<sup>ç</sup>], know [n\e\U], knowledge [n\A:l\ld\0\\_(\z\\_)], knuckle [n\uk\l~\,], nail [ne\l\l~], naive [n\A:'i:v\0], naked [ne\Ik<sup>ç</sup>(ld\0)], name [ne\Im], napkin [n\apk<sup>ç</sup>(In)], narrow [n\ar\e\U], nasal [ne\Iz\l~\,], nation [ne\l\sn\,], native [ne\l\Iv\0], nature [ne\It\s\er], naught [n\ot<sup>ç</sup>], navel [e\Iv\l~\,], necessary [nes\e\,ser\I], necklace [nekl\Is], needle [ni:\l~\,], ne'er [n\E\er], neither [ni:\d\er] (AmE) [na\ld\er] (BrE), nephew [nefj\U], network [net,w\3:rk<sup>ç</sup>], neutral [nu:t\r\0e\l~], never [nev\er], new [nu:], nickname [n\Ik\,ne\Im], nightmare [na\It,m\E\er], ninety [na\Int<sup>ç</sup>(I)], nobody [n\e\U,b\u\I], noise [n\O\Iz\0], none [n\un], nurse [n\3:rs], nursery [n\3:rs\er\I] or [n\3:rsr\,I], nurture [n\3:rt\s\er], nutmeg [n\utmeg], nutshell [n\ut,\se\l~]; (before /j/, forming a cluster with it (esp. in BrE)) as in neural [nju:r\e\l~], neuron [nju:,\r\A:n], neurotic [nj\U\r\A:\Ik<sup>ç</sup>], neutral [nju:t\r\0e\l~], nuclear [nju:kl\I\er], nuclei [nju:kl\I,a\I], nucleus [nju:kl\I\es], nuisance [mju:sn\,s], numeral [nju:m\er\e\l~], nutrition [nju:t\r\0\l\sn\,], new [nju:], newborn [nju:b\O:rn], newcomer [nju:\,k(um\er], news

[nju:z0], newsstand ['nju:z0,st\and0], Newton ['nju:tn\,], pneumatic [\,nju:\:'m\ə\`Ik], pneumonia [\,nju:\:'m\ə\Un\Ie].

a.2. Word-internally: (between vowels) as in announce [e'n\A\Uns], annoy [e'n\O\I], banner ['b\0\an\er], canning ['k^h\an\In], diner ['d\0a\In\er], dinner ['d\In\er], fanny ['f\an\I], funny ['f\un\I], honey ['h\un\I], Johnny ['d\0\_\(\z\_\)\A:n\I], money ['m\un\I], pony ['p^h\ə\Un\I], running ['r\un\In], sonny ['s\un\I], Sony ['s\ə\Un\I], sunny ['s\un\I], Tony ['t^h\ə\Un\I]; (in contact with other consonants, without forming clusters with them) as in answer ['\ans\er], banal ['b\0e\In\l~\,], cancer ['k^h\sns\er], candy ['k^h\and\I], construct [k^h(en'str\0ukt^), consul ['k^h\A:ns\l~\,], contend [k^h(en't^hend\0], council ['k^h\A\Uns\l~\,], counsel ['k^h\A\Uns\l~\,], counter ['k^h\A\Unt^er], country ['k^h\unt'r\0\I], demonstrate ['d\0em\en\,str\0e\It^), encounter [In\k^h\A\Unt^er], final ['fa\In\l~\,], flannel ['f\l\0\an\l~\,], invite [In\va\It^), Monday ['m\und\I], pencil ['p^h\ens\l~\,], Sunday ['s\und\I], tonsil ['t^h\A:s\l~\,], tunnel ['t\un\l~\,]; (before word-final consonants (usually /t,d,s,z,t/s,d/z,st/), forming clusters with them) as in ain't [e\Int^), ant [\ant^), aunt [\ant^), bent [b\0ent^), cant [k^h\ant^), can't [k^h\ant^), font [f\A:nt^), front [fr\0unt^), lent [lent^), mount [m\A\unt^), pint [p^h\Int^), rent [rent^), saint [se\Int^); and [\and\0], band [b\0\and\0], bend [b\0end\0], friend [fr\0end\0], hound [h\A\Und\0], kind [k^h\A\Ind\0], lined [la\Ind\0], mined [ma\Ind\0], opened [\e\Up^end\0], rind [ra\Ind\0], sand [s\and\0]; chance [t\s\ans], dance [d\0\ans], France [fr\0\ans], glance [g\l\ans], hence [hens], mince [m\Ins], prince [p\r\0\Ins], rinse [r\Ins], sense [sens], since [s\Ins], tense [sens], Vince [v\0\Ins]; cleanse [k\l\0enz\0], deans [d\0i:nz\0], fans [f\anz\0], hens [henz\0], jeans [d\0\_\(\z\_\)i:nz\0], lanes [le\Inz\0], mines [ma\Inz\0], pins [p^h\Inz\0], runs [r\unz\0], sons [s\unz], tons [t^h\unz\0], wines [wa\Inz\0]; bunch [b\0\unt\s], French [fr\0ent\s], lunch [l\unt\s], munch [m\nt\s], ranch [r\ant\s]; change [t\se\Ind\0\_\(\z\_\)], fringe [fr\0\Ind\0\_\(\z\_\)], hinge [h\Ind\0\_\(\z\_\)], singe [s\Ind\0\_\(\z\_\)], syringe [s\ə'r\Ind\0\_\(\z\_\)]; against [e'genst^).

a.3. Word-finally: (after vowels) as in Anne [an], ban [b\0\an], bean [b\0i:n], been [b\0i:n], bun [b\0\un\0], can [k^h\an], design [d\0\I'za\In], determine [d\0\I't^h\3:rm\In], dine [d\0a\In], done [d\0\Un], fine [fa\In], gin [d\0\_\(\z\_\)\In], gone [g\on], line [la\In], mine [ma\In], own [\ə\Un], pen [p^hen], run [r\un], sign [sa\In], son [s\un], sun [s\un], tan [t^h\an], ton [t^h\un], vine [v\0a\In], zone [z\0\ə\Un]; (after consonants (usually /l,r/, forming clusters with them) as in kiln [k^h\I\l~n]; barn [b\0\A:rn], born [b\0\O:rn], burn [b\0\3:rn], concern [k^h(en's\3:rn], corn [k^h\O:rn], darn [d\0\A:rn], earn [\3:rn], iron [a\l\ern], learn [l\3:rn], mourn [m\O:rn], return [r\I't^h\3:rn], torn [t^h\O:rn], turn [t^h\3:rn], warn [w\O:rn],

b) [n\,] (syllabic `n'): (usually word-finally):

b.1. after plosives, as in bidden ['b\0\Idn\,], bitten ['b\0\Itn\,], Britain ['b\0r\Itn\,], button ['b\0\utn\,], captain ['k^h\aptn\,], carton ['k^h\A:rtn\,], certain ['s\3:rtn\,], Clinton ['k\l\0\Intn\,],

eaten [ˈiː.tn̩], Eden [ˈiː.dn̩], flatten [ˈflʌ.tn̩], forbidden [fɪrˈbɪdn̩], forgotten [fɪrˈgɒt.n̩], gotten [ˈgɒt.n̩], hidden [ˈhɪdn̩], kitten [ˈkɪ.tn̩], laden [ˈleɪdn̩], latent [ˈleɪ.tn̩], Latin [ˈlʌ.tn̩],

maiden [ˈmeɪdn̩], Manhattan [ˌmænˈhæt.n̩], maintenance [ˈmeɪntn̩.əns], Martin [ˈmɑːrt.n̩], mitten [ˈmɪ.tn̩], mustn't [ˈmʌs.n̩.t̩], mountain [ˈmaʊn.tn̩], ridden [ˈrɪdn̩], rotten [ˈrɒt.n̩], sentence [ˈsentn̩.s], sudden [ˈsʌdn̩], suddenly [ˈsʌdn̩.lɪ].

b.2. after fricatives, as in bison [ˈbɪs.n̩], condition [kənˈdɪʃ.n̩], christen [ˈkrɪʃ.n̩], cousin [ˈkaʊz.n̩], decision [dɪˈsɪʃ.n̩], doesn't [ˈdɒz.n̩.t̩], dozen [ˈdɒz.n̩], equation [ɪˈkwəʊ.ɪz.n̩], even [ˈiːv.n̩], fasten [ˈfɑːs.n̩], glisten [ˈglɪs.n̩], hasn't [ˈhɑːz.n̩.t̩], hasten [ˈheɪs.n̩], Jason [ˈdʒeɪz.n̩], listen [ˈlɪs.n̩], mansion [ˈmæns.n̩], mason [ˈmeɪs.n̩], petition [pɪˈtɪʃ.n̩], reason [ˈriːz.n̩], risen [ˈrɪz.n̩], Stephen [ˈstiːv.n̩].

c) [n̩] (partially devoiced ˈn): usually after syllable-initial /s/ or after /t/, as in snack [snæk̚], snail [sneɪl̚], snake [sneɪk̚], snatch [snæt̚s], sneer [sneə̚], sneeze [sniːz̚], snob [snəʊb̚], snore [snɔːr̚], snow [snəʊ], chutney [ˈtʃʊtn̩], flatness [ˈflæt̚n̩].

d) [M̩] (labiodentalized ˈn): before labiodental consonants (/f,v/) if the vowel before /n/ is stressed, as in canvas [ˈkænv̩.es], envelope [ˈenv̩.eɪ.ʌp̩], [ˈenv̩.ɪ], infant [ˈɪnf̩.ənt̩], invitation [ˌɪnv̩.eɪ.tʃeɪ.ʃn̩], invoice [ˈɪnv̩.oɪs̩].

e) [n̩] (dentalized ˈn): before dental consonants (/t,d/), as in month [mʌn̩.t̩], ninth [naɪn̩.t̩], tenth [tɛn̩.t̩], on them [ˈɒn̩.t̩], when they came [ˈwen̩.t̩].

f) [n̩] (postalveolarized ˈn): before /r/, as in Henry [ˈhenr̩], unrest [ˌʌnˈrest̩].

g) [ŋ] (velarized ˈn): before velar consonants (/k,g/), as in anger [ˈæŋg̩.ər], ankle [ˈæŋk̩.l̩], bingo [ˈbɪŋg̩.eɪ.ʊ], conquer [ˈkɒŋk̩.ər], drink [drɪŋk̩], finger [ˈfɪŋg̩.ər], hunger [ˈhʌŋg̩.ər], ink [ɪŋk̩], longer [ˈlɒŋg̩.ər], monkey [ˈmʌŋk̩], pink [pɪŋk̩], sink [sɪŋk̩], stronger [ˈstrɒŋg̩.ər], thank [tʰæŋk̩], think [tɪŋk̩].

#### Allophones of /ŋ/

a) [ŋ] (fully voiced velar ˈn): word-internally

a.1. Between vowels, as in banger [ˈbæŋg̩.ər], banging [ˈbæŋg̩.ɪŋ], belongings [ˌbelɒŋg̩.ɪŋz̩], Bingham [ˈbɪŋg̩.əm], Birmingham [ˌbɪŋg̩.əm], Buckingham [ˌbʊk̩.ɪŋg̩.əm], clanging [ˈklæŋg̩.ɪŋ], clinging [ˈklɪŋg̩.ɪŋ], dinging [ˈdɪŋg̩.ɪŋ], ganging [ˈgæŋg̩.ɪŋ], hanger [ˈhæŋg̩.ər], hanging [ˈhæŋg̩.ɪŋ], hangover [ˈhæŋg̩.əv̩.ər], longing [ˈlɒŋg̩.ɪŋ], prolonging [prɒŋg̩.ɪŋg̩.ɪŋ], ringer [ˈrɪŋg̩.ər], ringing [ˈrɪŋg̩.ɪŋ], singer [ˈsɪŋg̩.ər], singing [ˈsɪŋg̩.ɪŋ], stinging [ˈstɪŋg̩.ɪŋ], wringing [ˈrɪŋg̩.ɪŋ].

a.2. In contact with other consonants, as in amongst [ə'mʌnst], ankle [ˈæŋkəl], anchor [ˈæŋkə], anger [ˈæŋgə], angry [ˈæŋgrɪ], belonged [bɒlɪŋd], belongs [bɒlɪŋz], conquer [ˈkɒŋkə], donkey [ˈdɒŋki], English [ˈɪŋɡlɪʃ], fangs [fæŋz], finger [ˈfɪŋgə], hanged [ˈhænd], hangs [hæŋz], hunger [ˈhʌŋgə], hungry [ˈhʌŋgrɪ], kings [kɪŋz], kingdom [ˈkɪŋdəm], kingship [ˈkɪŋsɪp], Kingstown [ˈkɪŋstəʊn], language [ˈlæŋɡwɪdʒ], longed [lɒŋd], longs [lɒŋz], longer [ˈlɒŋgə], longest [ˈlɒŋɡɪst], monger [ˈmʌŋgə], prolonged [prɒlɒŋd], prolongs [prɒlɒŋz], rings [rɪŋz], sings [sɪŋz], songbook [ˈsɒŋbʊk], songs [sɒŋz], stronger [ˈstrɒŋgə], strength [stɹɒŋθ], strongest [ˈstrɒŋɡɪst], wrongdoer [ˈrɒŋduːə], wrongdoing [ˈrɒŋduːɪŋ], wrinkle [ˈrɪŋkəl], younger [ˈjʌŋgə], youngest [ˈjʌŋɡɪst].

a.3. Word-finally, as in among [ə'mʌn], belong [bɒlɪŋ], cling [kɪŋ], ding [dɪŋ], fang [fæŋ], hang [hæŋ], king [kɪŋ], long [lɒŋ], ping [pɪŋ], pong [pɒŋ], prolong [prɒlɒŋ], ring [rɪŋ], sang [sæŋ], sing [sɪŋ], song [sɒŋ], sting [stɪŋ], strong [strɒŋ], sung [sʌŋ], tongue [tʃʌŋ], wrong [rɒŋ], young [jʌŋ].

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b) [ŋ] (partially devoiced velar `n'): after voiceless plosives, as in the unusual pronunciation of bacon [ˈbeɪkŋ], kicking [ˈkɪkŋ], picking [ˈpɪkŋ], thicken [ˈtɪkŋ].

c) [ŋ,] (syllabic velar `n': after voiceless plosives, as in the unusual pronunciation of the words booking [ˈbʊkŋ,], cooking [ˈkʊkŋ,], kicking [ˈkɪkŋ,], looking [ˈlʊkŋ,], making [ˈmeɪkŋ,], picking [ˈpɪkŋ,]; or in the phrases I can go [ˈaɪ kŋ, ˌgəʊ], Jack and Kate [ˈdʌkŋ, ˌkeɪtŋ], Rock and go [ˈrɔ:kŋ, ˌgəʊ].

Allophones of /l/:

Allophones of /r/:

Allophones of /j/:

Allophones of /w/: