

Chapter – 3

3. The Consonant Clusters

A consonant cluster is defined as a group or sequence of consonants that appear together in a syllable without a vowel between them (intrasyllabic). (cf. eg, Jones 1976). For example, /sp/ and /ts/ in the word 'spots' or /spr/ in the word 'spring'.

3.1 The Consonant Clusters in English

So as to give a complete picture of initial (onset) and final (coda) clusters in English, the following sources have been compared : Heinz J. Giegerich (1992) who analyses consonant clusters in terms of generative phonology, Peter Roach (2002) whose analysis of possible phoneme combinations is based on more traditional structural approach, San Duanmu (2009) who supplements Giegerich's and Roach's descriptions of the phonotactic possibilities of English with the aspects of Optimality Theory and gives the reliable statistical data, and one internet source (<http://www.html>) which offers the practical list of some consonant clusters in English.

The word, i.e. the syllable in English can begin with a vowel, with one, two or three consonants. No word in English begins with

more than three consonants (Roach 2002 : 71), thus the maximum number of segments in the word-initial consonant cluster is three.

At the beginning of English words (syllables), in many cases, the first element is /s/ and the second consonant is approximant /l, r, w, j/ (cf. Roach 2002 : 73 ; Duanmu 2009 : 160).

3.1.1 Initial CC Clusters in English :

Starting with oral plosive /p/ as first member followed by /r, l, j, w, f, s / as second members.

pr	-	prei	=	pray prey
	-	prais	=	praise
	-	prinses	=	princes
pl	-	plei	=	play
	-	plæn	=	plan
	-	pleit	=	plate
pj	-	pjʊə ^r	=	pure
	-	pju:tətiv	=	putative
	-	pjʊərifai	=	purify
pw	-	pwebləʊ		
pf	-	pfennig	=	pfennig
ps	-	psi	=	psai

Starting with oral plosive /b/ as first member followed by /r, l, j / as second members.

br	-	brɑ:s, bred	=	brass, bread
bl	-	blʌd, blɒk	=	blood, block
bj	-	bju:ti	=	beauty

Starting with oral plosive /t/ as first member followed by / r, w, j / as second members.

tr	-	trail, treid	=	trail, trade
tw	-	twin, twais	=	twin, twice
tj	-	tju:n, tju:tə	=	tune, tutor

Starting with oral plosive /d/ as first member followed by / r, j, w / as second members.

dr	-	dra:ft, drill	=	draft, drill
dj	-	dju:, dju:ti	=	due/dew, duty
dw	-	dwel, dwindle	=	dwell, dwindle

Starting with oral plosive /k/ as first member followed by / r, l, w, j, n, v / as second members.

kr	-	krɒs, krai	=	cross, cry
kl	-	kleim, kla:s	=	claim, class
kw	-	kwæk	=	quack

kj	-	kju:pid, kjʊə ^r	=	cupid, cure
kn	-	kneset	=	Knesset
kv	-	kva:s (kvæs), kvetʃ	=	kvass, kvetch

Starting with oral plosive /g/ as first member followed by / r, l, w / as second members.

gr	-	gra:s, grʌnt	=	grass grant
gl	-	glæd, gla:s	=	glade, glass
gw	-	gwen, gwendə	=	Gwen, Gwenda

Starting with nasal plosive /n/ as first member followed by / j, j / as second members.

nj	-	nju:, nju:z	=	new, news
mj	-	mju:, mju:t	=	mew, mute

Starting with fricative /f/ as first member followed by / l, r, j / as second members.

fl	-	flæt, flə:	=	flat, flaw
fr	-	fref, fri:z	=	fresh, freez
fj	-	fju:, fjʊəri	=	few, fury

Starting with fricative /v/ as first member followed by / j / as second member.

vj - vju:, vjetnæm = view, vietnam

Starting with fricative /θ/ as first member followed by / r, w, j / as second members.

θr - θri:, θril = three, thrill

θw - θwæt = thwart

θj - θju:li:, θju:sididi:z

Starting with fricative /s/ as first member followed by / t, p, k, l, w, n, m, t, j, r / as second members.

st - step, stif = step, stiff

sp - spɒt, spin = spot, spin

sk - skɒf, sku:l = scoff, school

sl - sli:t, sli:p = sleet, sleep

sw - swet, swi:p = sweat, sweep

sn - sneil, snəʊ = snail, snow

sm - sma:t, smiθ = smart, smith

st - stəʊv, sti:l = stove, steel

sj - sju:t = suit

sr - srɪnʌgə = srinagar

Starting with fricative /z/ as first member followed by /l/ as second member.

zl - zloti = zloty

Starting with fricative /h/ as first member followed by /j/ as second member.

hj = hju:mid, hju:mən = humid, human

Starting with affricate :

The number of the initial three consonant clusters in English is quite limited, there are nine of them, all starting with /s/ as first member followed by /pl, pr, pj, tr, tj, kl, kr, kw, kj/ as second members.

spl	-	splæʃ	=	splash
		spli:n	=	spleen
spr	-	sprɪŋ	=	spring
		sprain	=	sprain
spj	-	spjʊəriəs	=	spurious
str	-	streɪn	=	strein
		straɪk	=	strike
stj	-	stju:pɪd	=	stupid
		stju:drəʊ	=	studio
skl	-	sklɜːrəʊsɪs	=	sclerosis

skr	-	skri:n	=	screen
		skri:m	=	scream
skw	-	skwɒʃ	=	skweə ^r
skj	-	skjʊə	=	skua

In Duanmu's view, the initial /s/ can be excluded and onset clusters either form a complex sound (they are produced with different articulator, cf. Duanmu 2009; 43 - 44) or they are predictable by morphology as real or potential affixes.

The word (syllable) in English can end with a vowel, with one, two, three or four consonants (Roach 2002; 73). The maximum number of consonants in the final consonant cluster is four.

There are 55 final two-consonant clusters in English. They usually end with /s, z, t, d, ɒ/ which represent separate morphs (Roach 2002 : 73); /s, z/ are the sound forms of ending -(e)s, and /t, d/ stand for the ending -(e)d.

3.1.2 Final CC Clusters in English

Starting with oral plosive /p/ as first member followed by /θ, t, s/ as second members.

pθ	-	depe	=	depth
pt	-	stopt	=	stopped
		wept	=	wept

ps - tæps = taps
 kæps = caps

Starting with oral plosive / b / as first member followed by /d, z / as second members.

bd - rɒbd = robbed
 rʌbd = rubbed
 bz - kʌbz = cubs

Starting with oral plosive / t / as first member followed by /s,/ as second member.

ts - kʌts = cuts
 mæts = mates

Starting with oral plosive /d/ as first member followed by /z/ as second members.

dz - wʊdz = woods

Starting with oral plosive /k/ as first member followed by /θ, t, s / as second members.

kθ - kəθɒniən = chthonian
 kt - wɜ:kɪt = worked
 tə:kt = talked
 ks - tə:ks = talks
 wɜ:ks = works

Starting with oral plosive /g/ as first member followed by /d, z/ as second members.

gd	-	begd	=	begged
gz	-	bægz	=	bags

Starting with nasal plosive /m/ as first member followed by /p, f, d, z/ as second members.

mp	-	kæmp	=	camp
mf	-	nimf	=	nymph
md	-	dæmd	=	damed
mz	-	bɒmz	=	bombs

Starting with nasal plosive /n/ as first member followed by /ə, t, d, s, z/ as second members

nə	-	tənə	=	tenor
nt	-	wʌnt	=	want
nd	-	wɒnd	=	wand
ns	-	tens	=	tense
nz	-	henz	=	hens

Starting with nasal plosive / ŋ / as first member followed by /d, z, k/ as second members

ŋd	-	rɒŋd	=	wronged
ŋz	-	sɪŋz	=	sings
ŋk	-	bæŋk	=	bank

Starting with fricative / f / as first member followed by /θ, t, s/ as second members

fθ	-	fɪθ	=	fifth
ft	-	left	=	left
fs	-	sɪfs	=	snifs

Starting with fricative / v / as first member followed by /d, z / as second members

vd	-	seɪvd	=	saved
vz	-	knɪvz	=	naivz

Starting with fricative / θ / as first member followed by /s/ as second member.

θs	-	miθs	=	myths
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Starting with fricative / ð / as first member followed by /d, z/ as second members.

ðd	-	ri:ðd	=	wreathed
ðz	-	bri:ðz	=	breathes

Starting with fricative / s / as first member followed by /p, t, k/ as second members.

sp	-	wasp	=	wɒsp
st	-	last	=	lɑ:st
sk	-	ask	=	ɑ:sk

Starting with fricative / z / as first member followed by /d/ as second member.

zd	-	surprised	=	səpraɪzd
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Starting with approximant / l / as first member followed by /p, f, θ, t, d, s, z, k/ as second members.

lp	-	plup	=	pʌlp
lf	-	pelf	=	pelf
lθ	-	health	=	heleθ
lt	-	knelt	=	nelt
ld	-	wɜ:lɪd	=	wɪld
ls	=	fə:lz	=	fɔ:lz
lz	=	hɪlz	=	hɪlz
lk	=	bʌlk	=	bʌlk

(cf. <http://www.btinternet.com/~ted.power/clustersindex.html>)

The final three consonant clusters are quite numerous too, there are 40 of them. They usually end with /s,z,t,d/ (which, as

already mentioned, can easily be accounted for by morphology since they represent separate morphemes).

3.1.3 Final CCC Clusters in English

Starting with oral plosive / p / as first member followed by /əs, ts, st/ as second members.

pəs	-	depəs	=	depths
pts	-	ədbpts	=	adopts
pst	-	læpst	=	lapsed

Starting with oral plosive / t / as first member followed by /əs/ as second member.

təs	-	eitəs	=	eighths
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Starting with oral plosive / k / as first member followed by /ts, st/ as second members.

kts	-	ækts	=	acts
kst	-	nekst	=	next

Starting with nasal plosive / m / as first member followed by /ps, fs/ as second members.

mps	-	læmps	=	lamps
mfs	-	nimfs	=	nymphs

Starting with nasal plosive / n / as first member followed by /ts, dz/ as second members.

nts	-	tents	=	tents
ndz	-	sændz	=	sands

Starting with nasal plosive / ŋ / as first member followed by /st/ as second member.

ŋst	-	əmʌŋst	=	amongst
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Starting with fricative / f / as first member followed by /əs, ts/ as second members.

fəs	-	fifəs	=	fifths
fts	-	lifts	=	lifts

Starting with fricative / s / as first member followed by /ts/ as second member.

sts	-	təʊsts	=	toasts
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Starting with approximant Starting with fricative / l / as first member followed by /md, m, pt, ps, bz, vd, əs, nz, dz, ks, kt/ as second members.

lmd	-	əʊvəhwelmd	=	overwhelmed
lm	-	elmz	=	elms
lpt	-	helpt	=	helped
lps	-	helps	=	helps

lbz	-	bʌlbz	=	bulbs
lvd	-	ʃelvd	=	shelved
ləs	-	heləs	=	heat
lnz	-	kilnz	=	kilns
ldz	-	holdz	=	holds
lks	-	hʌlks	=	hulks
lkt	-	milkt	=	milked

(cf. <http://www.btinternet.com/~ted.power/clustersindex.html>)

The final four consonants clusters in English (7) are usually formed by three consonant clusters not containing final /s,z,t,d/ for the suffixes - (e)s and -(e)d.

3.1.4 Final CCCC Clusters in English :

Starting with oral plosive / k / as first member followed by /sts, səs/ as second members.

ksəs	-	siksəs	=	sixths
ksts	-	teksts	=	texts

Starting with nasal plosive / m / as first member followed by /pts/ as second member.

mpts	-	prompts	=	pompts
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Starting with approximant / l / as first member followed by /fəs, kts/ as second members.

lfəs - twelfəs = twelths
lkts - mʌlkts = mulcts

English shows that in the case of three-consonant clusters the phonotactic possibilities of the English phonemes are higher at the end of the syllable (word). Although the number of two-consonant clusters is identical in the word-initial (syllable onset) and word-final (syllable coda) position, three-consonant clusters are rare in onsets and frequent in codas, and four-consonant clusters occur only in codas .

However, on the basis of the CVX theory all coda clusters can be explained by morphology as real or potential affixes or they form a complex sound (Duanmu 2009: 171-181).

3.2 The Manipuri Consonant Clusters

The consonant cluster in Manipuri are the occurrences of two consonants within a syllable. The clusters found mostly at the initial position of a syllable or a word. No final clusters are found.

Initial cluster: The initial clusters are found in the word initial or syllable initial positions. The first members of such clusters with /w/ are the phonemes /k, k^h, g and s/ and the phonemes /r/ occurs as the second member of the phonemes /p, k, k^h, p^h, b, s, ŋ/ in case of reduplication.

Occuring with /w/ as the second member:

K + w	-	kwa	=	betel nut
		Kwak	=	crow
k ^h + w-		k ^h waŋ	=	waist
s + w	-	swaydə	=	here
g + w	-	gway	=	name of river

Occuring with /r/ as the second member:

P + r	-	prok – prok (cakpə)	=	intorably hot
K + r	-	krik – krik (təkpə)	=	scraching
k ^h + r	-	k ^h rək - k ^h rək (kəŋbə)	=	extremely dry
p ^h + r-p ^h rəŋ	-	p ^h rəŋ (coŋbə)	=	skipping'
b + r	-	brəŋ - brəŋ (həwbə)	=	flammable'
ŋ + r	-	ŋrəŋ - ŋrəŋ (ŋəŋbə)	=	grumbling'
s + r	-	sru – sru (təkpə)	=	scrubbing'

3.2.1 Syllable initial clusters in Manipuri

In the syllable initial clusters, the phonemes /p, b, c, k, b, d, j, g, p^h, t^h, k^h, s, m, ŋ/ are followed by the flap sound /r/. These clusters with /r/ as the second member are the result of loss of the vowel /ə/.

As in the example /ŋakcrəw/ ' a kind of fish ' .

c + r	-	ŋakcrəw	=	a kind of fish
t + r	-	kəptreŋ	=	spinning machine
k + r	-	ŋəkra	=	a kind of fish
b + r	-	cumbərəy	=	peach

d + r	-	kəŋdrum	=	ball
g + r	-	məŋgra	=	sweet potato
j + r	-	məyjrəw	=	name of place
p ^h + r	-	pomp ^h ri	=	mended cloth
t ^h + r	-	ləŋt ^h rəy	=	a kind of plan
k ^h + r	-	cəŋk ^h rəŋ	=	a kind of weeds
m + r	-	ləymram	=	name of place
s + r	-	ləysrəm	=	a surname
ŋ + r	-	ŋəŋrannəbə	=	a colour

In the syllable initials, the phoneme /p/ and /d/ also found as the first member while /w/ as the second member:

p + w	-	məwpwə	=	brother
d + w	-	ədwaydə	=	around there

Sometimes /y/ is found as the second member of the phoneme.

occurs with /y/ as the second member of syllable:

k ^h + y	-	sənək ^h ya	=	word used as an honour
		kyamgəy	=	place name

3.3 Contrastive study

Clusters found in both English and Manipuri:

All the following Manipuri initial clusters – /kw, kl, tr, dw, pr, sw, sr, pw, kr, br, dr/ are also found in English.

Initial cc clusters

kw = This consonant initial cluster is found in both the languages.

eg. English - kw - quack = kwæk
 Manipuri - kw - kwa = betel nut

kl = This consonant initial cluster is found in English only because it is found only in loan words in case of Manipuri.

eg. English - kl - claim, class = kleim, kla:s
 Manipuri - kl - klas = class

tr = This consonant initial cluster is found in both the languages.

eg. English - tr - trail, trade = trail, treid
 Manipuri - tr - kəptreŋ = spinning machine

dw = This consonant initial cluster is found in both the languages.

eg. English - dw - dwell, dwindle = dwel,
 dwindle

Manipuri - dw - ədwaid a = out there

pr = This consonant initial cluster is found in both the languages

eg. English - pr - pray prey = prei
 Manipuri - pr - cəmpɾa = lemon

sw = This consonant initial cluster is found in both the languages.

eg. English – sw - sweat, sweep = swet, swi:p

Manipuri – sw - sway = nervousness

sr = This consonant initial cluster is found in both the languages

eg. English – sr - srinagar = srɪnʌgə

Manipuri – sr - laysrəm = a surname

pw = This consonant initial cluster is found in both the languages

eg. English – pw - pwebləʊ = pueblo

Manipuri – pw - məwpwa = younger brother

kr = This consonant initial cluster is found in both the languages.

eg. English – kr - cross, cry = krɒs, krai

Manipuri – kr - ləykrək = crack

br = This consonant initial cluster is found in both the languages

eg. English – br - brass, bread = brɑ:s, bred

Manipuri – br - səmbriu = mole

dr = This consonant initial cluster is found in both the languages

eg. English – dr - draft, drill = drɑ:ft, drill

Manipuri – dr - kaŋdrum = hockey ball

gr = This consonant initial cluster is found in both the languages.

eg. English – gr - grass = grɑ:s

Manipuri – gr - məngra = sweet potato

Clusters found in English only :

Initial CCC clusters are found in English only.

eg. spl - splash, spleen = splæʃ, spli:n

spr - spring, sprain = sprɪŋ, sprain

Final CC clusters (syllable coda) are found in English only.

eg. pθ - “depth” = depθ

ts - “cuts, mates” = kʌts, mæts

Final CCC clusters (syllable coda) are found in English only.

eg. pst - lapsed = læpst

tθs - eights = eitθs

Final CCCC clusters (syllable coda) are found in English only.

eg. ksθs - sixths = siksθs

ksts - texts = teksts

Clusters found in Manipuri only:

These initial clusters are found in Manipuri only: /ky, k^{hw}, k^{hr}, t^{hr}, gr, cr, mr, jr/.

e.g. Manipuri	-	k ^{hw}	-	k ^{hwaŋ}	=	waist
		k ^{hr}	-	pək ^{hra}	=	widower
		cr	-	cocrobi	=	a type of sand
		mr	-	ləymram	=	a clan
		jr	-	həyjraŋ	=	knife
		t ^{hr}	-	kunt ^{hra}	=	thirty

Manipuri has only 2 word initial clusters (onset) while English has 2,3,4 word initial clusters, such as CC,CCC and CCCC clusters.

Manipuri does not have initial CCC clusters (syllables onset). Besides Manipuri does not have final clusters such as CC, CCC, CCCC (syllable coda) which are found in English. Because of these reason that the Manipuri speaker find it very difficult to pronounce words of these categories.