ABSTRACT

This paper tackles consonant cluster in Spoken Iraqi Arabic. Consonant cluster refers to a sequence of two or three consonant sounds in a single word. Spoken Iraqi Arabic shows such sequence, particularly that of two consonant sounds. Consonant clusters in Iraqi Arabic are either initial or medial. Most consonant sounds in Iraqi Arabic are likely to occur as initial clusters, except for a few sounds. First, an introduction is given regarding the subject, followed by a background and a snap overview. Then, consonant
cluster is elaborated on at the word-level in which consonant cluster is surveyed according to phonemes or initial sequences. Next, consonant cluster is discussed at other levels; grammatical, such as number and prefixes, and non-grammatical, such as borrowing, ellipsis, diminutive and so on. Finally, the paper reaches certain findings and conclusions.

KEY WORDS: Consonant Cluster, Iraqi Arabic, Standard Arabic, Language Sounds, Syllables, Sound Sequence, Affixation.

خلاصة

يتناول هذا البحث تعانق الأصوات الساكنة في المهجة العراقية العامية. تعانق الأصوات الساكنة هو تتابع صوتين أو ثلاثة أصوات ساكنة في نفس الكلمة، إن هذه الظاهرة وخاصة تتابع صوتين ساكنين موجودة في اللهجة العراقية. تعانق الأصوات الساكنة في اللهجة العراقية العامية هو أما من النوع الذي يقع في بداية الكلمة أو من النوع الذي يقع في وسط الكلمة. إن اغلب حالات تعانق الأصوات الساكنة في اللهجة العراقية العامية هي من النوع الذي يقع في بداية الكلمة بستثناء بعض الأصوات الساكنة. في بداية البحث،
1. INTRODUCTION

Consonant cluster, hence CC, is any sequence of adjacent consonants occurring initially or finally in a syllable, such as br- in bread and -st in best (Crystal, 1992:66) and (Wikipedia, 2009:2). Spoken Iraqi Arabic, SIA, in general exhibits a CC. The current paper investigates this area in SIA as it is used in urban dialects. The CC in SIA discussed here is initial and medial; two consonants pre-medial + initial in initial position and two consonants pre-medial + medial in medial position.
2. SUBJECT OVERVIEW AND BACKGROUND

Standard Arabic (SA), does not show initial or medial CC's. It shows final CC's, particularly in monosyllabic words such as *rәsm* (drawing), *ism* (name), *ḥәrb* (war),..etc. This is because SA is VCV or CVC (Rahim, 1980: 12., Rose, 2000:15, Kiparsky, 2005:32, and Erwin, 2004:21). However, medial CC's are likely to occur in words which are not monosyllabic, i.e. when there is more than one syllable in the word, as in words like *khәmsә* (five), and *mәsrәħiyә* (play; drama). Unlike SA, SIA shows occurrence of CC's, especially in initial and medial positions. Apart from the medial CC's which are already present in words in SA as they exist post-lexically in words whether they are in SA or SIA, initial CC's are triggered by such factors as the rapid speech, the lexical form of the word, and to less extent the syllabicity of that word. Hence, for example, the word *huna* (here) in SA, is pronounced in most of the times as *hna* in SIA.

3. CLUSTER DISTRIBUTION AT THE WORD-LEVEL

Due to the significance of CC's, particularly initial CC's, CC's will be considered first at individual words rather than at the grammatical behaviours in which these
words are used. CC’s are discussed according to their positions in the word. Phonemes are co-grouped on the basis of their similarity as to both manner and place of articulation. (1)

3.1. The Phonemes /s/, /ʃ/ and /z/

These phonemes are alveolar in place of articulation and fricative in manner of articulation; both /z/ and /ʃ/ are voiced v+, while /s/ is voiceless v-. /ʃ/ differs from the other two phonemes in that it is velarized. (2) /s/ is followed by the following sounds in initial position: /n/, /f/, /y/, /b/, /l/, /k/, /p/, /m/, and /h/; snoon (teeth), sneen (years), sfәnij (sponge), syoof (swords), sbēnağ (weapon), skafee (shoe-maker; shoe-repairer), sbane (spanner), sбуатель (seventeen), spagit-tee (spaghetti), sloogee (saluki), slab (dead body cloth; worthless cloth), sminit (cement) (3) and shal (diarrhea) (Al-Khalesi, 2004:96).

In medial position, the phoneme /s/ is followed by /m/, /bl/, /w/, /k/, /h/, /t/ and /j/; hence bismar (nail), mәsәbәh (swimming pool), esәwәd (black), esәmer (brown-faced), yiskit (to be silent), yishәr (to stay late), yistihee (to be
The phoneme /ś/ is followed by /b/, /kh/, /m/, /y/, /ŧ/, /ħ/ and /ğ/ in initial position; śboor (pl. little fish), śkhoone (fever), śkham (soot), śmat (eating-carpet), śmak (big head, brain), śyakh (skewers), śtoot (buckets), śhoo (dishes), and śgar (pl. little; small), (Erwin, 2004:77).

In medial position, /ś/ is followed by /m/, /n/, /f/, /ŧ/, /â/, /b/, /l/ and /r/; as in mәsмootә (dried little fish as a food), āšnam (pagans, statues), āšfәr (yellow), bәştiyә (small roofless kiosk-like trading table), ištә (master, foreman), yišâәd (to go up), išbiâ (finger), āšlee (original), yišbur (to be patient) and mәšrәf (bank), (Al-Khalesi, 2001:119).

/z/ is followed by /n/, /b/, /l/, /w/, /y/, /ğ/ and /r/ in initial position; znad (trigger; personal name), zbәlә (trash), zlimә (man), zәlabә (pancakes), zwәn (diminutively good), zyan (haircut), zğәiroon (little; small), zwaâ (vomiting), zroof (holes), zришк (currant {in Baghdad dialect}), (Van Ess, 1961:74). In medial position, /z/ is
followed by /r/ as in әzrәg (blue), (Woodhead and Beene, 1967:18)

3.2. The Phonemes /Θ/, /ð/ and /đ/

These phonemes are fricative in manner of articulation, and interdental in place of articulation. /ð/ and /đ/ are v+, whereas /Θ/ is v-. Like /š/, /đ/ is a velarized phoneme.

In initial position, /Θ/ is followed by /m/, /n/, /l/, /g/, /kh/ and /w/ as in 
Θmanyә (eight), Θnәn (two), ΘlәΘiyә (three-quarter of brick), Θmuntәәә (eighteen), Θgaә (pl.heavy), Θkhan (pl.thick), Θwәnәe (personal name), (Woodhead and Beene, 1967:88).

In medial position, /Θ/ is followed by /l/, /q/ and /r/ as in
mәΘloom (cleft), miΘqal (weight(of gold) and yiΘrim (to mince), (Van Ess, 1961:110).

In initial position, /ð/ is followed by /y/ ; әyәbә(wolves), әyool (tails), (Clarity et al., 2003:107). In medial position, /ð/ is followed by /b/ and /k/ as in
yiðbeḥ (to slaughter), yiðbel (to wither), and yiðkir (to remember), (Rahim and Farjo, 1985:280).

In initial position, /ḍ/ is followed by /l/, /b/, /kh/, as in ḏlooâ (ribs), ḏbaâ (hyenas), ḏkhan (pl. thick), (Al-Khalesi, 2001:44). In medial position, /ḍ/ is followed by /l/ as in meḍtoom (oppressed), (ibid.).

3.3. The Phonemes /â/ and /ħ/

Both /â/ and /ħ/ are pharyngeal fricatives; the first is v+ and the second is v-.

In initial position, /â/ is followed by /n/, /z/, /l/, /y/, /r/, /ḍ/, and /d/. Hence, ânad (persistence; personal name), âzaz (pl. dear), âlooč (chewing gums), âyoon (eyes), âyar (measure; weight), ârađ (pl. wide), âḍam (bones), âdam (death punishment), âroog (wood grain; fried meat) and âgaṭ (headband), (Hassan, 1981:44).

In medial position, /â/ is followed by /dl/, /lj/, /lz/, /ql/, /šl/, /rl/, /w/ and /g/, as in meâdun (mineral), meâjoon (paste), yiâzil (to depose; to remove), yiâqid (to tie; to knot), yiâśir (to squeeze), yiâruf (to know), yiâwee (to bark.
Consonant Clustr In Spoken Iraqi Arabic

\{dog\}),  yiâgid (to knit ),  yiâjin(to paste; to kneed ),(Jastrow, 1978:85).

In initial position, /ħ/ is followed by /śl/,/sl/, /l/, /ḍl/,/čl/, /zl/,/lr/ and /Θ/, as in ĥśan (horse), ḥsan (generosity ; personal name ),ḥsēn (personal name), ĥloog ( mouths), ĥdēreee ( sort of waterbird), ĥcaye (word; talk) , ĥzam (belt), ĥroorә (heat) and ĥΘale (food leftovers: nobody),(Van Ess, 1961: 44 ).

In medial position, /ħ/ is followed by /l/, /bl/,/fl/,/sl/,/śl/,/lr/,/m/,/čl/ and /ḍl/ as in yiḥlib(to milk ),yiḥbis(to imprison),yiḥfur(to dig),yiḥsib(to count) , yiḥšid (to envy),yiḥrig (to burn), yiḥcée (to talk),yiḥmee(to protect) , ěhmer (red), yiḥđer (to be present;to attend),(Woodhead and Beene, 1967:60).

3.4. The Phonemes /ğ/ and /kh/

The phonemes /ğ/ and /kh/ are velar fricatives;/ğ/ is v+ and /kh/ is v-. In initial position, /ğ/ is followed by /l/ and /l/ as in ĝrāb (crow) , and ĝlaf (cover ), (Al-Khaledi,2001:32). In medial position, /ğ/ is followed by /n/ as in miĝnėteeš (magnate), (Van Ess,1961:37).
In initial position, /kh/ is followed by /y/, /d/, /w/, /m/ and /t/, as in khyar (cucumber), khdoood (cheeks), khwan (brothers), kmuştėāaš (fifteen), khtiyyar (choice; selection) and khyat (sewing) (Clarity et. al. 2003:186).

In medial position, /kh/ is followed by /d/, /s/, /j/, /b/, /t/, /l/, as in әkhđәr (green), yikhşәr (to lose), yikhjәl (to be shy), yikhbәs (to make chaos), yikhbuәz (to bake), yikhәtimir (to be leavened) and yikhlәt (to mix) (Erwin, 2004: 107).

3.5. The Phonemes /b/, /t/, /d/, /ŧ/ and /q/

The phonemes /b/, /t/, /d/, /ŧ/ and /q/ are called plosives. /t/ and /d/ are alveolar sounds; /b/ bilabial; /q/ uvular, and /ŧ/ interdental. In initial position /b/ is followed by /t/, /z/, /l/, /l/, /š/, /h/, /r/ and /š/, as in btoon (stomachs; abdomens), bzeem (buckle), bladee (native; original), bšarә (good news), btisame (smile), bhar (spice), breesәm (silk), ibu brēš (wall gecko) and bšәt (rug) (Abu-Haidar, 1991:75).
In medial position, /b/ is followed by /l/, /y/, /r/, /n/, /t/ and /s/. Thus, *yiblaâ* (to swallow), *әbyәd* (white), *mәbroosh* (mashed), *yibnee* (to build), *mubred* (fine), *yibtir* (to dislocate), *bibsee* (pepsi) and *bsirәâ* (quickly), (Al-Khalesi, 2001:57).

In initial position, /t/ is followed by /r/, /l/ and /f/, as in *trab* (dust; sand), *tlaΘә* (three), *trak* (sportive shirt), *tlool* (hills), *tләtŧәәәš* (thirteen), *tfal* (spitting), (Al-Khalesi, 2004:28).

And in medial position, /t/is followed by /r/ as in *yitrik* (to leave; to let), (Mansour, 1991:26).

In initial position, /d/, is followed by /r/, /m/, /h/ and /n/. Thus, *drēčil* (tractor), *dmooә* (tears), *dhok* (place name), *dnan* (dirty stains), *dnaneer* (Dinars), (Clarity et al., 2003:46).

In medial position, /d/ is followed by /r/, /f/ and /w/, as in *yidris* (to study), *yidree* (to know), *yidfeә* (to push; to pay), *yidwee* (to be ignited), *yidfur* (to hit), *mәdәsә* (school), (Aziz, 1974:166-167).
In initial position, /q/ is followed by /m/, /l/, /r/ and /ś/. Henceforth, qmaš (fabric), qlame (pens; pencils), qrood (monkeys), qsoor (palaces), (Mansour, 1991:68).

In medial position, /q/ is followed by /f/, /ś/, /r/, /l/, /n/, /b/ and /č/ as in yiqful (to lock), yiqşuf (to strike (in battle), tæqreer (report), tæqleem (cutting; clipping), yiqnus (to target), yiqbәđ (to receive), yiqbәl (to accept) and eqčәm (a small lorry) (Clarity et al., 2003:84).

In initial position, /ŧ/ is followed by /w/, /r/, /n/ and /bl/. Hence, tвәreej (place name), trag (slap), twař (pl. tall; high), tnәәš (twelve), tbaru (axes), tnoon (tons), (Erwin, 2004b:28).

In medial position, /ŧ/ is followed by /r/, /l/, /b/, /w/, /f/ and /m/, as in yitrid (to fire, dismiss), yitlib (to seek), yitbәkh (to cook), yitwee (to roll), yitәâ (to go out), yitfir (to jump), yitmәs (to stick), (Rahim and Farjo, 1985:270).
3.6. The Phonemes /k/ and /g/

The Phonemes /k/ and /g/ are velar plosives; /k/ is v- and /g/ is v+. In initial position, /g/ is followed by /m/, /r/, /l/, /r/ and /d/, as in gmat (swaddle), grab (sheath), głođe (necklace), groon (horns), gļob (lamp), gwame (tribal retribution), gdoor = jdoor (cooking pots) (Woodhead and Beene, 1967:64).

In medial position, /g/ is followed by /â/, /d/ and /r/. Thus, yigâid (to sit), yigdәr (to be able), yigŧim (to clip), âәgroog (frog), nigrә (hole), (Jastrow, 1978:33).

In initial position, /k/ is followed by /r/, /š/, /w/, /b/, /l/, /r/ and /m/, as in krǝfus (celery), kšaš (hay), kwēt (kuwait), kbar (pl. big; large), klēčә (cookie), klētә (headwear), kramiyә (tip; bonus), kraâ (feet; legs of cow or sheep as food), kmēt (place name), (Al-Khalesi, 2004: 97). In medial position, /k/ is followed by /s/, /r/ and /w/; thus, mikǝrә (can opener), šukrәn (thank you), and yikwee (to iron) (Hassan, 1981:30).
3.7. The Phonemes /f/, /š/, and /h/

The Phonemes /f/, /š/ and /h/ are v- fricatives; /f/ is labio-dental, /š/ is palato-alveolar and /h/ is glottal. In initial position, /f/ is followed by /l/, /r/, /s/, /y/ and /ŧ/, as in floos (money), fšooś (little pieces), flan (somebody; someone), fleet (insecticidal sprayer), frag (missing), fraš (bed), frookh (male offspring (human and non-human), fsēfis (turkey), fŧir (mushroom), fyooee (pl. shades) and fyale (elephants), (Van Ess, 1961:74).

In medial position, /f/ is followed by /y/, /l/ and /r/. Henceforth, bofyә (buffet), ħәflә (party), mufrәd (retail sale), (Rahim and Farjo, 1985:267).

In initial position /š/ is followed by /â/, /m/, /w/, /r/, /k/, /kh/, /l/ and /n/, as in šâeer (barley), šmooâ (candles), šweĩ-yә (little), šraâ (sail), škool (different people), škheer (snort), šwәkit (when), šlon (how), šnaw (ups-and-downs), (Al-Khalesi, 2001:81).

In medial position /š/ is followed by /l/, /w/, /r/, /b/, /kh/, /k/, /l/ and /t/. Hence, nøšle (flu), sišwar (hair-dryer), āišreen (twenty), yišbәā (to be sufficient (of food)), yiškir (to thank), yišhәd (to witness; to testify), yišhәt (to while eating), yištibih (to suspect), yišrәb (to
drink), \textit{yišwee} (to grill), and \textit{yištib} (to delete), (Abu-Haidar, 1991:55).

In initial position, /h/ is followed by /n/, /w/, /d/ and /l/, as in \textit{hnak} (there), \textit{hwayne} (more), \textit{hna} (here), \textit{hdeâeš} (eleven), \textit{hdoom} (clothes), and \textit{hlal} (crescent; personal name), (Erwin, 2004:69). In medial position, /h/ is followed by /w/, /\textipa{d}/, /d/, /t/ and /\textipa{č}/. Hence, \textit{gehwә} (coffee; coffee shop) \textit{yihðee} (to hallucinate), \textit{yihdim} (to destroy), \textit{yihtәm} (to care), and \textit{yihčee} (to speak), (Hassan, 2002:82).

3.8. The Phonemes /j/ and /č/

/j/ and /č/ are post-alveolar affricates; the first is v+ and the second is v-. In initial position, /j/ is followed by /l/, /w/, /n/, /y/, /n/ and /r/, as in \textit{jilad} (book cover), \textit{jwareeb} (socks), \textit{jwareen} (neighbours), \textit{jnood} (troops), \textit{jyoob} (pockets), \textit{jdoor} (cooking pots), \textit{jnәzә} (funeral), \textit{jrood} (worn clothes), \textit{jrooḥ} (wounds), (Woodhead and Beene, 1967:86). In medial position, /j/ is followed by /r/, /m/ and /b/, thus \textit{yijrәḥ} (to wound), \textit{yijmәd} (to be frozen), \textit{yijbur} (to reconcile: to plaster: to oblige), (Jastrow, 1978:82).
In initial position, /č/ is followed by /m/, /l/, /f/ and /y/, as in čmağ (yashmak (headcover), člab (dogs), foof (gloves), čwalat (personal belongings), čyoos (bags), čmale (in addition; moreover), (Clarity et al., 2003:43).

In medial position, /č/ is followed by /l/ and /w/, hence, yičfee (to spill (a liquid or food), and yičwee (to cauterize), (Al-Khalesi, 2004:55).

3.9. The Phonemes /m/ and /n/

Both /m/ and /n/ are v+ nasals, /m/ is bilabial, while /n/ is alveolar.

In initial position, /m/ is followed by /r/, /l/, /g/, /kh/, /lâ/, /šl/, /kl/, /l/, /bl/, /nl/, /tl/, /čl/ and /ğ/, as in mrad (wish, desire), mgəd-dee = mjəd-dee (beggar), mkhad (pillows), mânit (persistent), mšēər (well-positioned), mkəs-sib (crusty), mlooə (salinity), mrAYə (mirror), mbarək (congratulation), mnawəščee (builder's helper), mtiʔan (exam), mtiyaz (previlige), mčaree (muleteer; donkey-driver), mbel-lel (wet), and mğərbət (mixed), (Aziz, 1974:167).
In medial position, /m/ is followed by /l/, /s/ and /š/. Thus, әmlәh (gray), ымсәh (to wipe), тәмләek (possession), ымшәe (to walk), (Mansour, 1991:52).

In initial position, /n/ is followed by /s/, /kh/, /d/, /š/, /z/ and /j/, as in nsabә (relatives), nkhaә (bran), ndәrdiә (we chat), nәәſ-tә (God willing), nzool (damn), njawub (we answer) (Woodhead and Beene, 1967:103).

In medial position, /n/ is followed by /t/, /b/, /z/, /j/ and /š/. Hence, yinŧee (to give), yinbiә (to exhumе), yinŧәh (to hit (by head), yinzil (to go down), yinšәe (to advise), sinjab (squirrel), (Woodhead and Beene, 1967:97).

3.10. The Phonemes /r/ and /w/

The phonemes /r/ and /w/ are approximants; /r/ is v+ post-alveolar and /w/ is v- bilabial. In initial position, /r/ is followed by /g/, /b/, /f/, /m/, /k/ and /y/, as in rgab (necks), rbaә (necktie), rfooә (shelves), rmooәә (eyelashes), rкәә (stirrup), rәәjeәә (men), (Hassan, 1981:72).

In medial position, /r/ is followed by /m/, /g/, /s/, /j/, /ſ/, /l/, /b/, /k/, /h/ and /ğ/. Hence, tirmiz (thermos: air-tight
container), *hirmis* (little bugs), *sirgee* (door hinge), *khirde* (money change), *kursee* (chair), *yirjeâ* (to return), *yirmee* (to shoot), *yirfeâ* (to lift), *yirsim* (to draw a picture), *yirbaħ* (to win; to gain), *yirkâb* (to ride), *mârhâm* (ointment) and *burγuř* (bulgur), Mansour, 1991:130)

The phoneme /w/ has no medial position. It has initial position only, as it is followed by /ħ/, /d/, /l/ , /š/ , as in *wħeide* (woman), *wdaâtêk* (by your life {swearing}), *wlêd* (little boy), *wšeeâô* (skein; of string) and *wšalô* (trivial amount of juice or water) (Abu-Haidar, 1991:62).

3.11. The Phoneme /l/

The phoneme /l/ is v+ alveolar lateral. It has two realizations; light /l/ and dark /forcing/. In initial position , /l/ is followed /s/ and /ħ/, as in *lsan* (tongue) and *lhfaf* (blanket), (Al-Khalesi, 2004:64).

In medial position, /l/ is followed by /wl/, /zl/, /âl/, /bl/, /gl/, /čl/, /dl/, /sl/, /ml/, /wl/ and /ħl/. Thus, *yilmee* (to twist), *yilzâm* (to hold), *yilâeb* (to play), *yilbôs* (to wear), *yilguf* (to catch), *yilčim* (to scratch), *yildeğ* (to bite), *yilšeâ* (to bite), *yilmeâ* (to shine), *âlwan* (colours), *yilhôm* (to
pant ), *yilğe* (to find), *məlçoom* (cauterized), (Erwin, 2004:55).

4. OTHER AREAS OF CC's FORMATION

There are other areas in which CC's are formed. Some of these areas are lexical, i.e., a given CC is formed in the word related, and others are not lexical, in which case CC's are triggered by other aspects such as grammar and the like.

4.1. Plurals

Most words in SIA are characterized by an initial CC when these words are in plural. No such CC is formed when these words in are used singular. Many plurals in SIA have shown to have an initial CC's.

The sound sequence of these words ranges from CCVC and CCVCV to CCVCVC, hence *rdan* (sleeves), *blam* (boats), *dyабә* (wolves), *gλoob* (hearts), *âyal* (family members), *gboor* (tombs), *črookh* (wheels), *ğyoom* (clouds), *gšoor* (fruit skin), *tyoor* (birds), *qfaɫe* (locks), *šwarib* (moustaches), *sneen* (years), *jbal* (mountains), *jfoon* (eyelids), *zrar*
(buttons), \textit{m\textashy sa\textashy t} (combs), \textit{\textashy a\textashy oog} (branches), \textit{z\textashy loof} (sideburns), \textit{syoof} (swords), \textit{m\textashy too\textashy n} (shoulders), \textit{d\textashy moo\textashy â} (tears), \textit{krake} (shovels), \textit{m\textashy sa\textashy t\textashy e} (combs), \textit{b\textashy too\textashy n} (stomachs; abdomens), \textit{khus\textashy oom} (noses), \textit{b\textashy o\textashy o\textashy š} (geese), \textit{dboobe} (bears), \textit{khwan} (brothers), \textit{ryajeel} (men), \textit{blame} (boats), \textit{snoon} (teeth), \textit{šhoor} (months), \textit{q\textashy soor} (palaces), \textit{b\textashy ta\textashy t\textashy e} (bottles), \textit{kwab\textashy e} (cups) (Woodhead and Beene, 1967:88-89).

Some plurals, which are adjectival in form, show initial CC's, and these are also used as nouns, since there is no differentiation between adjectives and nouns in Arabic, particularly at the sentence level. These include \textit{twa\textashy t\textashy l} (long; tall), \textit{g\textashy sar} (short), \textit{âra\textashy d} (wide), \textit{mtan} (thick; coarse), \textit{sman} (fat), \textit{ś\textashy gar} (small; young), \textit{kbar} (big; old), \textit{khfa\textashy f} (light), \textit{Θga\textashy t} (heavy) (Al-Khalesi, 2004:33).

4.2. Borrowings

Some words that are borrowed from other languages carry CC's. These words generally retain the same pronunciation when they are used in SIA.
Most borrowings from English contain initial CC’s and they carry one of these phonemes as the pre-initial consonant; /bl/,/pl/,/fl/,/sl/,/tl/, /kl/,/gl/, and /šl/, whereas the initial consonant is often /r/,/l/,/b/, /t/ or /l./b/ as in bloz (blouse), blok (block), blayis (pliers), bronz(bronze) and brēk (brake) (Woodhead and Beene, 1967:26). /p/ as in prēmiz (primus stove), (Al-Khalesi, 2004:43). /s/ as in srinjә (syringe), sbortee (sportive ; lively), stad (stadium), sbanә (spanner) and stәndәr (standard), (Clarity et al, 2003 : 45 ). /k/ as in krēn (crane),kreem (cream), klinis (kleenex), klibiǔ (staples;clips), klēčә (stuffed cake)(4) and klәč (clutch),(Erwin,2004: 66). /t/ as in trēle ( trailor ), triktәr ( tractor ), and tray( trial; attempt),(Van Ess, 1961:46). /g/ as in głąś (glass) and greez(grease).(ibid.). /f/ as in frēzәr (freezer), flawәnzә (flu) , flaween ( flying wheel ), and flәnjә ( flange ), (Abu-Haidar ,1991:85). /š/ as in štaygәr (sticking tiles ) ( Woodhead and Beene,1967:75).

There are certain few words which originally carry no initial CC and they are pronounced with initial CC in SIA,as in gzoz (exhaust pipe).There are other words in SIA of initial and medial CC’s which are borrowed from
other languages. These include Persian *stikan* (teacup), French *sechoir* (hair-dryer), and Turkish *klaw* (sort of head cover), (Mansour, 1991: 144).

4.3. Personal Names

Many personal names in SIA begin with initial CC’s. Such CC is formed due to the elision of the medial vowel in these names, that is known as *syncope*, as in *ânad*, *gzar*, *jwad*, *swadee*, *âlēwee*, *sbahee*, *şhab*, *znad*, *mzaĥim*, *sâood*, *trad*, *ňsan* and *ňsēn* (Al-Khalessi, 2004: 112-113).

4.4. Diminutives

Diminutives are another area in which CC’s are formed. Some words in SA are made diminutive in SIA and this results in initial CC’s, as for example in *msēčeen* SA: *miskeen* (poor, unlucky), *bnei-yә* SA: *bint* (girl, maiden), *skootee* SA: *sakit* (silent; secretive), *ňšēnee* SA: *ňsan* (fox) {lit. little horse}, *mrei-yә* and SA: *imrәʔә* (woman) (Al-Khalessi, 2001: 78). There are diminutives in SIA which are not based on SA and yet begin with initial CC, such as *bzēseen* (kitten), and
Consonant Clustr In Spoken Iraqi Arabic

$m\hat{e}bis$ (ringlet : a sort of folk game), (Clarity et al.,2003:33-34).

4.5. Ellipsis

Sometimes CC's are formed due to the deletion of a sound in a word. The sounds deleted are either the initial or the medial ones and therefore an initial CC is likely to occur.

The first type is the deletion of initial sound, short vowel /ı/. Such deletion is motivated by rapid speech in words with lexically medial CC's, which thus results in initial CC's. Hence, braheem, smâeel, štinaâee (artificial; industrial), sbooâ (week), htizaz (vibration), stiqbal (reception: living room), zdiham (crowd), stiâlamat (information office), stinsakh (copying), stiâdad (readiness), rtibat (link), rtifaâ (height), nkisar (regression), ntihaʔ (finish; expiration), ltiwaʔ (twisting), nũbas (locking; retention), ndilaâ (outbreak), ntišar (spread). (Al-Khaledi, 2001:67).

The second type is the deletion of the medial vowel in words from SA. The medial sound is often the vowel /u/. Therefore, words like tureed (you/ she wants), tusafir
(you/she travels) and tuqabil (you/she meets) in SA become treed, tsafir and tqabil in SIA (Woodhead and Beene, 1967:34).

There is a minor type of sound ellipsis, that is of l of the article il (the) in words to which this article is prefixed. Thus, words like sei-yara (car) will be pronounced as is-sei-yara (the car); a medial germination of /s/ is formed and l of il is deleted due to a regressive assimilation. However, there is another pronunciation in which the definite article is used. Here, no germination is produced. Instead, a medial CC is formed, hence ilsei-yara. The same thing applies to words begin with /sl/, /dl/, /tl/, /zl/, /šl/, /šl/, /Θl/, /tl/, /šl/, /čl/, /jl/, /rl/ and /n/ when the definite article is used at the beginning of these words.

4.6. Grammatical Aspects

There are a few grammatical aspects which are significant as CC's are formed therein.
4.6.1. The Prepositional Prefix b-
When the prefix \textit{b}- (in/at) is added to words, initial CC's are formed as in \textit{bhay} (in/at this), \textit{bðolә} (in/at those), \textit{bkēfәk} (at your ease), \textit{brahtәk} (take it easy), \textit{bdaâәt} (by...life{swearing})(Jastrow, 1978:107).

4.6.2. The Prefix n-
A prefix that is used to mark first person pl. in verbs, as in \textit{njawib} (we answer), \textit{nðawil} (we try), \textit{ndawim} (we keep on something), \textit{nhačaee} (we talk to) and \textit{nbawiâ} (we look at), (Clarity et al. 2003:76).

4.6.3. The Interrogative Prefix š-
This prefix is added to words to produce questions, and therefore initial CC's are formed, as in \textit{šgәd} (how much?), \textit{šwәkit} (when?/at what time?), \textit{šlon} (how?), \textit{šmalәk} (what is wrong with you?), \textit{šâindәk} (what do you have?/what have you got?), \textit{šrayid} (what do you want?), \textit{šdәâwә} (why is it such?/how come it is so and so?), \textit{šsәw} (what is going on?/what happens?), \textit{šâindek} (what do you have?), \textit{šbeek} (what is wrong with you?), \textit{šsәw-wә} (what did he do?) and \textit{šmәdreek} (how could you know?), (Al-Khalesi, 2004:77).
4.6.4. Participle Adjectives

There are participle adjectives begin or formed with \( m - \), denoting a reception of an activity or action, or a certain quality. The CC's formed in these words are initial and they consist of /m/ as the pre-initial consonant followed by another sound. Of these adjectives are \( m\&l-\&l \) (spoilt), \( m\&d\&m \) (dominating), \( m\&s\&f\&m \) (wrapped with a fine metal), \( m\&d\&\&b\&l \) (spheroid: ball-shaped), \( m\&n\&j\&r \) (rusty), \( m\&d\&h\&n \) (covered with oil), \( m\&k\&k\&l \) (assorted), \( m\&h\&b\&e \) (missed up; untidy), \( mA\&f\&f\&n \) (rotten; mould), \( m\&h\&f\&f\&i\&s \) (finished; none), \( m\&g\&f\&\& \) (inattentive), \( m\&s\&b\&m \) (nailed; stuck), \( m\&j\&r\&i\&s \) (chilled), \( m\&k\&i\&y\&f \) (glad; delighted), \( m\&h\&y\&e \) (puzzling; confused), \( m\&h\&l\&m \) (learned), \( m\&f\&f\&f \) (jocular; funny), \( m\&z\&r\&g\&e \) (ornamented), \( m\&h\&h\&i\&g \) (catching up with), \( m\&r\&h\&b\&f \) (ill-mannered), \( m\&f\&r\&f \) (brushed: rubbed), \( m\&d\&\& \) (drowsy), \( m\&c\&n\&m \) (cozy; comfortable), \( m\&s\&k\&r\&b \) (worn out) (car), \( m\&f\&f\&l\&i\&s \) (bankrupt; broke), \( m\&h\&r\&h\&b \) (electrified), \( m\&k\&s\&s\&i\&b \) = \( m\&j\&s\&s\&i\&b \) (crusty), (Woodhead and Beene, 1967:94).
5. FINDINGS

1. The study finds that the pronunciation of most words, with CC's initial or medial, proceed through three main forms, according to which an initial or medial CC's are identified or not, when these words are pronounced in both SA and SIA.

Table (1) below shows how this happens in four words from SA; *kitab* (book), *huna* (here), *ΘәlaΘә* (three), and *ħiśan* (horse).  

![Table 1]

<table>
<thead>
<tr>
<th>SA</th>
<th>SIA</th>
<th>SIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. CVCV</td>
<td>1. CCV</td>
<td>1. VCCV</td>
</tr>
<tr>
<td>3. No vowel elision or Intrusion</td>
<td>3. Elision of medial vowel (syncope)</td>
<td>3. Intrusion of initial vowel (prothesis)</td>
</tr>
<tr>
<td><em>huna</em></td>
<td><em>hna</em></td>
<td><em>ihna</em></td>
</tr>
<tr>
<td><em>kitab</em></td>
<td><em>ktab</em></td>
<td><em>iktab</em></td>
</tr>
<tr>
<td><em>ΘәlaΘә</em></td>
<td><em>tlaΘә</em></td>
<td><em>itlaΘә</em></td>
</tr>
<tr>
<td><em>ħiśan</em></td>
<td><em>ħśan</em></td>
<td><em>ihśan</em></td>
</tr>
</tbody>
</table>
2. SIA speakers break up final and medial CC's when pronouncing words from SA by inserting a vowel (epenthesis) usually a short one at the end of these words; *ism* → *isim* (name); *qәbl* → *qәbil* (before); *šәâb* → *šәâub* (difficult).

3. Because three-consonant cluster does not exist in SIA, Iraqi EFL learners break up this cluster in English words beginning with three consonants. The said learners insert a vowel (epenthesis) separating the first consonant from the other two ones. Therefore, words like *street, spring* and *student* are pronounced as *sitreet, sipring* and *situdent*.

4. Moreover, some EFL learners encounter difficulty in producing CC's correctly as they insert an initial vowel (prothesis) at the beginning of words with two consonants in the pronunciation of these words, hence, words such as *sky, special* and *smart* are pronounced as *isky, ispecial* and *ismart*.

6. PEDAGOGICAL IMPLICATIONS

1. The study indicates that Iraqi EFL Learners generally face a difficulty in producing CC's in the pronunciation of
English words, especially those words which begin with initial CC's.

2. This difficulty in producing initial CC's in English need to be observed and taken care of when teaching phonology for Iraqi EFL Learners.

7. CONCLUSIONS
1. CC's occur only in initial and medial position(s) of the word.
2. CC's in SIA consists of two consonant sounds. There is no three consonant cluster at the lexical form of the single word. Three consonant cluster is sometimes formed through the grammatical behaviour of the word, as with words with lexically initial CC when the definite article *il*(the) is prefixed to these words, hence *ḥzam*(belt)→ *ilḥzam* (the belt), and *qlam* (pencils) → *ilqlam* (the pencils).
3. Initial CC's, with regard to lexical form of words can be summed up as follows:
   1. CCVC → *floos* (money)
   2. CCVCV → *ḥjare* (stone)
Consonant Clusters in Spoken Iraqi Arabic

3. CCVCVC → jwareen (neighbours)

4. CCVCVVCV → stiraĥe (rest)

4. Medial CC's, with regard to lexical form of words can be summed up as follows:
   1. CVCCVC → mәsrәḥ (theatre)
   2. CVCCCV → khәmsә (five)
   3. CVCVCCVC → musәlsәl (series; drama)

5. Initial CC's are possible with all consonant sounds in SIA, except for the sounds /p/, /ʔ/ and /y/.

6. CC in SIA is either initial or medial. Final CC does not exist in SIA and it is confined to few words, all of which are borrowings from English such as šort (shorts), sink (sink), bәnk (bank), sәnt (cent) and kart (cart).

7. Words in SIA often consist of single CC and a simultaneous (initial and medial) CC is a rarity. Initial and medial CC are found in words like skәmlee (chair), zrišk (currant), zlabye (pancakes), brәâšee (wall gecko)
and *mselfen* (covered). Such words are CCVCC, CCVCCV or CCVCCVC as far as sound sequence is concerned.

8. Initial and medial CC's does not exist in SA. In SA, there is final CC's only, particularly in monosyllabic words. e.g. *jism* (body), *qәlb* (heart), and *һәrf* (letter).

9. In borrowings, SIA speakers either retain the same native pronunciation or they insert an epenthetic vowel; *stikan* = *istikan* /sti:kan/ (teacup), *stәrin* = *stәrin* /stl:rin/ (steering).

8. TRANSCRIPTION OF THE PHONEMES MENTIONED IN THIS PAPER

8.1. CONSONANTS

1. /b/ v- bilabial plosive as in Eng. bank
2. /d/ v+ alveolar plosive as in Eng. date
3. /t/ v- alveolar plosive as in Eng. tent
4. /k/ v- velar plosive as in Eng. crane
5. /j/ v+ post-alveolar affricate as in Eng. just
6. /l/ v+ alveolar lateral as in Eng. late
7. /m/ v+ bilabial nasal as in Eng. film
8. /n/ v+ alveolar nasal as in Eng. night
9. /ɡ/ v+ velar plosive as in Eng. globe
10. /s/ v- alveolar fricative as in Eng. mass
11. /h/ v- glottal fricative as in Eng. height
12. /č/ v- post-alveolar affricate as in Eng. chase
13. /w/ v- bilabial approximant as in Eng. wind
14. /z/ v+ alveolar fricative as in Eng. busy
15. /θ/ v+ interdental fricative as in Eng. three
16. /ð/ v- interdental fricative as in Eng. this
17. /r/ v+ post-alveolar approximant as in Eng. rest
18. /f/ v- labio-dental fricative as in Eng. fine
19. /y/ v+ palatal semivowel as in Eng. year
20. /š/ v- palato-alveolar fricative as in Eng. mission
21. /ğ/ v+ velar fricative as in SA ğabә (forest)
22. /p/ v- bilabial plosive as in Eng. pilot
23. /kh/ v- velar fricative as in Scottish loch
24. /q/ v- uvular plosive as in SA qәleel (little)
25. /â/ v+ pharyngeal fricative as in SA âәsәl (honey)
26. /š/ v+ alveolar velarized fricative as in SIA śēf (summer)
27. /t/ v- interdental velarized plosive as in SIA tәreeq (road)
28. /h/ v- pharyngeal fricative as in SA ḫәyat (life)
29. /d/ v+ interdental velarized fricative as in SIA dәl(shade); dәbab (fog)
30. /ʔ/ v- glottal plosive as in SA maʔ (water)
8.2. VOWELS

1. /a/ long open unrounded as in Eng. car
2. /ee/ long close front spread as in Eng. wheat
3. /ē/ long mid-front spread as in SIA lēl (night)
4. /ou/ long mid-back rounded as in Eng. coal
5. /u/ as in short half-open front unrounded as in Eng. cut
6. /oo/ long close back rounded as in Eng. school
7. /i/ short half-close front spread as in Eng. sit
8. /u/ short half-close back rounded as in eng. good
9. /ә/ short half-open front unrounded as in Eng. ago
10. /ay/ close diphthong as in Eng. my
11. /ei/ close diphthong as in Eng. way
12. /au/ close diphthong as in Eng. cow
9. REFERENCES


10. CONVENTIONS USED

1. SIA       Spoken Iraqi Arabic
2. SA        Standard Arabic
3. Eng.      English
4. v-        voiceless
5. v+        voiced
6. pl.       plural
7. -         gemination
8. ;         similar or related meanings
9. :         different meanings
10. lit.     literally
11. /        transcription
12. =        alternative pronunciations
13. { }      explanation
11. NOTES

(1) The IPA symbols of Arabic sounds, especially consonants are not used here, and letters and letter-based symbols are used instead. The sporadic use of IPA symbols throughout the paper is only to show the wrong pronunciation of some words in English.

(2) It means a movement of the back part of the tongue towards the lips. Thus, the sound is given a distinctive back resonance. (Crystal, 1992:371).

(3) This word has several other variations, most of which are of initial CC's; sminit, smint, smeed, šbintoo and simeed.

(4) Both klēčə (stuffed cookie) and kəleešə (cliché) though refer to two different things in SIA, are in fact taken from one word in English, that is cliché and the meanings of the two former words are modeled according to the word which means stereotype or platitude. (Wikipedia, 2010:2).

(5) This applies almost to all words which are both monosyllabic and CVCVC in sequence.

(6) The transcription of the sounds of SIA is based on that given in Nasr (1979:22), Al-Khalesi (2001:8) and Clarity et al. (2003:12).