

Morphophonemic Changes in Standard Arabic: The Case of Irregular Plurals

Key Words: Standard Arabic, Morphophonemic Changes, Plural, irregular Plural

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كلمات مفتاحية: اللغة العربية، التغيرات الصرفية الصوتية، جمع التكسير

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Abstract: Morphophonemic changes are the morphological and phonological changes that take place in a single word due to plural, case, tense, or gender. The current paper elaborates on this interconnection from an Arabic perspective, by considering the issue of morphophonemic changes in Standard Arab as a process that involves significant changes in the various irregular patterns of plural. It draws on the structure of Arabic mainly phonology and morphology, and therefore it focuses on irregular plural which has many forms. First, the paper introduces plural in Arabic, by elaborating on its various forms. Then, the paper classifies irregular plural. Finally, the paper suggests a few conclusions and recommendations. **Key words:** Standard Arabic, Morphology, Phonology, Plural, Irregular plural, Broken plural, Morphophonemic changes, Morphophonology.

ملخص: ان هذا البحث هو محاولة لتسليط الضوء على تغيرات صرفية وصوتية تحدث في اللغة العربية عند تغيير حالة الكلمة كالتغيير من المفرد الى الجمع ومن زمن الى آخر من خلال توضيح الحالات الصوتية والصرفية التي تصاحب مثل هذا التغيير، ويركز البحث في هذا السياق على جمع التكسير في اللغة العربية لكونه أوضح مثال على حدوث عدة متغيرات صوتية وصرفية في الكلمة عند تحويلها من المفرد الى الجمع، ورغم كثرة البحوث التي كتبت على جمع التكسير سواء في اللغة العربية أو اللغة الانكليزية الا ان أهمية هذا البحث تبرز في تناوله هذا الجمع من منظور صوتي وصرفي وما يترتب على ذلك من تغيرات صوتية وصرفية ودلالية متنوعة اضافة الى سرد جميع أنواع الجمع الغير السالم المتداول في اللغة العربية. يتناول البحث في البداية تعريفًا للجمع وللتغيرات الصرفية والصوتية في ضوء دراسات سابقة ثم يحلل كل نوع من هذا الجمع بالتفصيل ويختتم البحث بعدة نتائج وتوصيات واستنتاجات.

١. Introduction and Definition

Morphophonemic changes are the morphological and phonological changes, alterations, and variations that take place in a single word due to such processes as plural (pl.), case, tense, and gender. These changes feature an interconnection between phonology and morphology. Gussmann (١٩٨٥) emphasized the interconnections between phonology and morphology by focusing on the significance of morphological alterations on the phonological irregularities. Matthews (١٩٧٤:١٥٦) defined morphophonemic processes as transitional between morphology and phonology, considering transitional fields as often the hardest to delimit, adding that there is no simple way to determine what belongs to morphophonemics and what belongs to morphology or phonology proper. Morphophonemic changes are thus transitional between morphology and phonology. Morphophonemics is an intermediary level of analysis between phonology and morphology in which the phonological regularities in the framework of morphology, especially the systematic phonological variants of morphemes and the conditions of their occurrence, are described (e.g. the two phonetic variations of the past tense morpheme -ed in *stayed* [ste:d] vs *heaped* [hi:pt]). The concept of an abstract phonological level underlying the concrete expressive form was first developed by Trubetzkoy (١٩٢٩) and (١٩٣١) and further developed by Chomsky and Halle (١٩٦٨), where the transfer of an abstract morphophonological (deep) structure (deep structure) (=a systematic phonemic level) into the concrete phonetic realization of the surface structure is guaranteed. Jensen (١٩٩٠:٧) maintained that “Morphophonemics refers to the changes in the shape of morphemes in different environments. Some such changes occur in purely phonological environments, as in the regular pl. suffix in English.

٢. Elaboration and Similar Studies

Chomsky (١٩٥١) tackled morphophonemic changes and alterations in Hebrew by considering pl. and noun formation. He (ibid.) viewed these changes as regular processes that are representative of original forms. Chomsky's account of Hebrew morphophonemics is one of the prominent classical accounts in the field of morphophonemics. Martin (١٩٥٢) analyzed derivation and number in Japanese by investigating the morphophonemic changes in that language. He elaborated on the importance of phoneme and syllable as the sources of alteration. Martin (١٩٥٢) held that morphemes in general are much more complicated than it is thought when it comes to asymmetry and complementation in consonant movement. McCarthy (١٩٧٩:٣٣٥) emphasized the importance of consonant slots in irregular plural being representative of the all the processes occurring in the word especially metathesis. He added that the roots of the singulars are changeable according to the lexical ambient of the word, and therefore sometimes even consonants are elided if they are quinquiliteral in roots, that is, having five consonants. Bybee and Brewer's (١٩٨٠) study accounted for morphonemic changes in some Romance dialects and languages that are spoken in Spain and France through an analysis of number and tense. They argued that there is a persistent change in Romance languages because of autonomy rules especially in some Spanish dialects. McCarthy (١٩٨٣:٣٠٠-٣٠١) raised the issue of consonant insertion in the Arabic broken pl. whereby *w*- is inserted in such pls. as *qanuun*→*qewaneen* 'laws'. According to him, there is a context of transformation in certain pls. in triliteral nouns that require the insertion of *w*-. He added that such context is triggered by the fact that triliteral nouns undergo root change and thus rendered as quadriliteral in pl. Köpcke (١٩٨٨) presented a different account of morphophonemic changes as he shed light on the role of native speakers in constructing the pl. of certain words, arguing that native speakers tend to formulate pls. that are analogous with certain words. Köpcke based his study on pre-defined rules or schemas that account for lexical as well as phonological basis. Oztaner's (١٩٩٦) study is a detailed account of the grammar of Turkish in terms of morphophonemic rules. Oztaner formulated a morphophonological framework of analysis whereby words are analyzable.

٣. Irregular Plural in SA

The plural in SA has been a prominent area of investigation and analysis by grammarians, linguists, as well as those who are interested in Semitic phonology and morphology. Forbes (١٨٦٣:٤٨) listed twenty four patterns of irregular pl. that realize possible broken pls. in SA. He proposed a relationship between the root of the root and the type of irregular pl., concluding that modelling occupies a key position in the formation of such pls. Palmer (١٨٧٤:١٣٢-١٣٤) designated nine main patterns or forms of irregular pl.: *fu ʔal*, *fu ʔlan*, *fu ʔuul*, *fu ʔelaʔ*, *fewa ʔil*, *fu ʔat*, *fe ʔlan*, *fewa ʔeel*, and *fi ʔal*. He (ibid.) insisted that not all pls.s are possible, and some are derived from some other ones. Cowan (١٩٥٨:٢٠٠ff) has listed thirty patterns of irregular pl. in SA. He based his classification on the triliteral roots of the verb in SA. Haywood and Nahmad (١٩٦٥:٥١-٥٧) suggested eleven categories of irregular pl. as

follows; *efʕal*, *fuʕuul*, *fiʕal*, *fuʕul*, *efʕal*, *fuʕelaʔ*, *efʕilaʔ*, *fuʕlan*, *feʕalil*, *feʕaleel*, and *feʕalile*. They (ibid) maintained that irregular plurals are too variant that they must be learned rather than inferred. Murtonen (١٩٦٤:٦٢-٦٨) and Levy (١٩٧١:٣٣f) proposed a criterion-based model for the classification of irregular plural forms in SA in which the vowel quality is the main core. Their model classifies irregular plural forms according to percentages or numbers assigned to these plurals. Moscati (١٩٨٠:٨٨-٩٢) listed six main categories of irregular pl., adding that the internal change is the common alternation in all of these categories. He claimed that these six categories are the most common form of irregular, whilst the others are minor or rare. Holes (٢٠٠٤:١٦٨) believed that semantic extension and metathesis play a significant role in the formation of irregular pl. in SA. He also added that sometimes irregular pls. are extended in order to avoid ambiguity especially in relation to dual or to fem. However, there are two main classifications of irregular pl. in SA that are considered as the main source of broken pls. to date; they are those proposed by Wright (١٩٧٤) and McCarthy and Prince (١٩٩٠).

١. Wright (١٩٧٤:٢٠٠-٢٣١)

Wright (١٩٧٤) classified irregular pl. into thirty one categories. These categories are *Fuʕul*; *rusul* “messengers”, *Fiʕel*; *khiyem* “tents”, *Fiʕal*; *rijal* “men”, *Fuʕuul*; *muluuk* “kings”, *Fuʕʕel*; *ʕuzzel* “unarmed ones”, *Fuʕʕal*; *tujjar* “traders”, *Feʕele*; *qetele* “killers”, *Fuʕat*; *junat* “criminals”, *Fiʕele*; *dibebe* “bears”, *Efʕel*; *ewjuh* “faces/aspects”, *Efʕal*; *eqdam* “legs”, *Efʕile*; *eʕmide* “pillars”, *Fewaʕil*; *khewatim* “rings”, *Feʕaʕil*; *jezaʕir* “islands”, *Feeʕlan*; *heetan* “whales”, *Fiʕlan*; *sibyan* “boys” / *Fuʕelaʔ*; *jubenaʔ* “coward ones”, *Efʕilaʔ*; *eğniyaʔ* “rich people”, *Fuʕlan*; *fursan* “knights”, *Feʕla*; *merđa* “sick people”, *Feʕal*; *shehar* “deserts” *Feʕala*; *šekawa* “complaints”, *Feʕaya*; *hedaya* “presents”, *Feʕeel*; *ʕebeed* “slaves” , *Fuʕuule*; *numuure* “tigers”, *Feʕale*; *shehabe* “companions”, *Feʕel*; *khedem* “servants”, *Fiʕel*; *rikeb* “riders”, *Feʕalil*; *kewakib* “planets”, *Feʕaleel*; *sekakeen* “knives”, and *Feʕalile*; *esatiđe* “masters/professors.”

٢. McCarthy and Prince (١٩٩٠:٢١٣)

McCarthy and Prince (١٩٩٠) limited irregular pl. forms to thirty one categories. They based their classification on Wright's (١٩٧٤) categories and thus they put these categories into four main classes of irregular pl. according to syllabification or stress. Further, they classed only the possible or common categories, after labeling the other ones as rare. *Iambic* class includes the pls. that consist of single unstressed syllables followed by stressed syllables. This class includes the categories ١ to ٩. *Trochaic* class includes the pls. that consist of long syllables followed by short syllables. This class includes the categories ١٠ to ١٤. *Monosyllabic* class includes the pls. that consist of one syllable, or Cʕ roots with single vowel (V). This class includes the categories ١٥ to ٢٩, and *Others* including pls. are those that are based on gemination, especially the Cʕ roots with single vowels. These include the categories ٣٠ to ٣١.

٤. Remarks on Notation and Transcription

All the exemplary data used in this paper are written in a transliterated form, with meaning enclosed in brackets. The sound notation used is partly IPA, as in /ð/ and /h/ and partly some English sounds, as in /j/, /y/, /b/, in addition to a few designed symbols, in order to represent all sounds, especially short vowels (Vs) which are not represented or spelt in the written form, and to show the ultimate pronunciation as accurately as possible. Abbreviated symbols containing Cs and Vs denote the pattern of the noun or that of the pl., as in CvCC for *qelb* (heart). Root symbols with overt sounds represent extra sounds, those which are not part of the noun in pl. pattern, as well as the precise form of the noun, as in CaCee for *qad'ee* (judge). Patterns with voiced Cs, as in (?) in CuCeCa? or (m) in meCCeC, represent the addition of external or non-root Cs to the original root pattern. As for SA templates, they are represented by various forms such as *Fa^ʔil*, *Fewa^ʔil*, etc. Based on three main root Cs (f-ʔ-l), taken from the word *فعل* (to do) in SA, templates are given these terms in order to represent the structural roots of the word from which these sing. nouns are derived.

٥. Discussion and Categorization

Generally, there are two types of pl. in SA; sound or regular pl., and irregular or broken pl. Sound pl. is marked by two suffixes, each according to the gender of the word. Thus, *-at* is used with fem. nouns, whereas *-uun/-een* is used with masc. nouns. Further, there are a few words in SA that can be pluralized with both regular and irregular pl. As for irregular pl., there is no single specific form or affix that marks such pl. Rather, there are many irregular pl. forms that feature various processes or changes in the words related. Moreover, some of these forms are applicable to both fem. and masc. Irregular pls. are discussed in terms of three main aspects; pattern, template, and alternation. Pattern is the phonological, or roughly the consonantal as well as the vocal, structure of the word, represented by C for Consonant. As for Vs, they are either written. e.g. *i/e/u*, or they represented by *v* only. Template stands for the word structure in SA based on the roots *ف/ع/ل*. Alternation is concerned with all the phonological and morphological changes that take place in a word when it is pluralized.

١. Ef^ʔal cvcvc→vccvc

Ef^ʔal is one of the common irregular forms of pl. in SA, as there are many bilateral and trilateral nouns pluralized in this form. The formation of this pl. involves the addition of (e) at the beginning of the noun as well as the insertion of the long V (a) before the final C. Hence, the pl. is roughly eCCaC. The nouns related are based in sing. on CeCeC, CeCC, CiCC, and CuCC. As for bilateral nouns, they often take CvC, where (v) may be (uu), (ee) or (ou).

Pattern: CeCeC → eCCaC **Template:** Fe^ʔel **Alternation:** ١. Prefixation of a V ٢. Elision of the first internal V (e) ٣. Lengthening of the second internal V (e)→(a), as in *qelem* (pen)→*eqlam* (pens)/*hedeth* (event)→*ehdath* (events)/*kheber*

(an item of news)→*ekhbar* (news)/ *tebeq* (dish)→*etbaq* (dishes)/ *qedem* (foot)→*eqdam* (feet).

Pattern: CeCC→eCCaC **Template:** Fe^ql **Alternation:** ١. Prefixation of a V (e) ٢. Elision of the internal V (e) ٣. Breaking the final CC by infixing a V (a), as in *nehr* (river)→*enhar* (rivers)/ *ferd* (individual)→*efrad* (individuals).

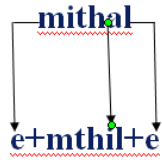
Pattern: CiCC → eCCaC **Template:** Fi^ql **Alternation:** ١. Prefixation of a V (e) ٢. Elision of the internal V (i) ٣. Breaking the final CC by infixing a V (a). Examples are *šikl* (shape)→*eškal* (shapes)/ *šiʔr* (verse)→*ešʔar* (verses)/ *šifr* (zero)→*ešfar* (zeroes)/ *thiql* (weight)→*ethqal* (weights)/ *milh* (salt)→*emlah* (salts).

Pattern: CuCC→ eCCaC **Template:** Fu^ql **Alternation:** ١. Prefixation of a V (e) ٢. Elision of the internal V (u) ٣. Breaking the final CC by infixing a V (a), examples include nouns such as *šubġ* (paint)→*ešbaġ* (paints)/ *ʔumq* (deep)→*eʔmaq* (deeps)/ *ʔušb* (grass)→*eʔšab* (grasses)/ *buʔd* (dimension)→*ebʔad* (dimensions)/ *qurs* (disc)→*eqraś* (discs)/ *juzʔ* (part)→*ejzaʔ* (parts)/ *ʔumar* (age)→*eʔmar* (ages)/ *qutb* (pole)→*eqtab* (poles). In this form of pl., there is a significant change that occurs when the noun is changed from sing. to pl. It is the change of the type of root as to the number of Cs contained in this root. C^ʔ roots become bilateral; this is especially in nouns beginning with (w). In this respect, (w) is changed to a V (ou), which eventually changes the type of the root from trilateral to bilateral, as a C has been removed. Thus, the template CvCvC becomes vCvC in pl.; *weten* (home)→*outan* (homes)/ *weled* (boy)→*oulad* (boys)/ *weter* (string)→*outar* (strings)/ *werem* (tumor)→*ouram* (tumors). On the other hand, bilateral roots are changed in template, too. In bilateral nouns, based on CvC, the medial V is changed to (y), if this V is (ee) or (ei) in the sing. root. The pl., therefore, is eCCaC, while it is CvC in sing, as in: *kees* (bag)→*ekyas* (bags)/ *deen* (religion)→*edyan* (religions). If the medial V is (ou), (uu) or (a), it is changed to (w) in pl.; *kuukh* (cottage)→*ekwakh* (cottages)/ *ruuh* (soul)→*erwah* (souls)/ *suuq* (market)→*eswag* (markets)/ *suur* (wall)→*eswar* (walls)/ *qous* (bow)→*eqwas* (bows)/ *dour* (role)→*edwar* (roles)/ *koun* (universe)→*ekwan* (universes). The addition of the pre-initial (e) may as well be affected phonetically by the sort of the first C in the sing. root, and hence, (e) becomes (ei), because that C is (y). Such behaviour can only be accounted for by the fact that (y) is a vowel-like sound; *yum* (day)→*eyyam* (days). However, in bilateral nouns where the medial V is neither of the above Vs, it is (a) as in these two examples, (w), rather than (y), is inserted between the first C and the medial V; *hal* (condition)→*ehwal* (conditions) = CaC→eCWaC/ *mal* (money/property)→*emwal* (monies/ properties) = CaC→eCWaC.

٢. ef^qile

This pl. form is used to derive sing. mas. nouns. The sing. nouns included in this pl. are based on a C^ʔ root (three Cs with two internal Vs). The first V is a short voiced non-spelled V (كسرة، فتحة، ضمة), whereas the other V is a long orthographic V. In pl., the short orthographic V (fethe) is inserted at the beginning and at the end of the noun. Additionally, the first internal short V is elided, while the second long

spelled V becomes a short voiced V only. Hence, the change from sing. to pl. involves the prothesis of (e) in a pre-initial C root, the syncope of the first V, the alternation of the second long V to a short one (i), and the addition of (e). The final pl. form of the word will be based on the root $v+CCvC+v$, where plus-marked Vs denote Vs inserted pre- and post-lexically; $e+CCiC+e$. The following fig. shows the pluralization of the word *mithal* (example) into *emthile* (examples):



Nouns pluralized in this form are based on CiCaC, CeCaC, and less frequently CuCaC and CeCeeC.

Pattern: CiCaC→eCCiCe **Template:** Fi^aal **Alternation:** ١. Prefixation of a V (e) ٢. Elision of the short V (i) ٣. Shortening of the internal V (a)→(i) ٤. Suffixation of a V (e). Examples include *qina^a* (mask)→*eqni^ae* (masks)/ *siyaj* (fence)→*esyije* (fences).

Pattern: CeCaC→eCCiCe **Template:** Fe^aal **Alternation:** ١. Prefixation of a V (e) ٢. Elision of the short V (e) ٣. Shortening of the internal V (a)→(i) ٤. Suffixation of a V (e), examples include *šerab* (beverage)→*ešribe* (beverages)/ *demaġ* (brain)→*edmiġe* (brains)/ *mekan* (place)→*emkine* (places)/ *nešat* (activity)→*enšite* (activities).

Pattern: CeCeeC→eCCiCe **Template:** Fe^aeel **Alternation:** ١. Prefixation of a V (e) ٢. Elision of the short V (e) ٣. Shortening of the internal V (ee)→(i) ٤. Suffixation of a V (e), as in *rešeed* (credit)→*eršide* (credits)/ *rešeef* (sidewalk)→*eršife* (sidewalks)/ *šereet* (stripe)→*ešrite* (stripes)/ *d'ereeh* (shrine)→*ed'rihe* (shrines).

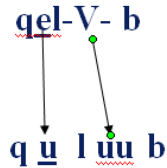
Pattern: CuCaC→eCCiCe **Template:** Fu^aal **Alternation:** ١. Prefixation of initial V (e) ٢. Elision of the short V (u) ٣. Shortening of the internal V (a)→(i) ٤. Suffixation of a V (e), as in *fu?ad* (heart)→*ef?ide* (hearts)/ *su?al* (question)→*es?ile* (questions)/ *turab* (sand)→*etribе* (sands).

If third C in the root is (?), it is replaced by a the semi-vowel (y), to separate the two Vs and to avoid V sequence; *du^a?* (prayer/ plea)→*ed^aiye* (prayers/pleas)/ *ġiḍa?* (food)→*eġḍiye* (foods). Words which are bilateral (have two Cs standing as a root) undergo shift in the final V. Thus, /y/ is inserted after the two Cs to separate the short Vs; *nadee* (club) [ʔ Cs; n/d] → *endiye* (clubs) [ʔ Cs' n/d/y]. Therefore, this bilateral noun becomes trilateral in pl. Another change occurs in this form represented by the shift in root quality. Here, the C (w) is changed to a V (ou), and the trilateral noun becomes bilateral in root accordingly; *wereed* (vein)→*ou^aride* (veins)/ *wisam* (insignia)→*ou^asime* (insignias). Notwithstanding this remarkable change in the sing. root, a noun may not change in root, even if this change involves

the elision of a C. The noun *wadee* (valley) is bilateral in root, consisting of (w) and (d) as a root, but in pl., (y) is inserted finally to separate the two final short Vs (i) and (e), and thus this new C replaces the elided (w) in pl. *oudiye* (valleys), (d) and (y).

٣. fuʿuul

This form includes principally Cʿ roots, in addition to a few bilateral ones. The Cʿ root of sing. nouns is commonly CvCC. The internal V is a short voiced sound only (فتحة or كسرة). In pl., this root becomes CvCvC. The first internal V, whatever be that V, alternates to a short voiced V (ضمة). More importantly, such irregular form results in breaking the final C cluster in the sing. by inserting a long V in between. Therefore, the root can best be represented as CvCuuC, to emphasize the insertion of a long V. The fig. below illustrates the change of a sing. noun to pl. in this form through as exemplified in the word *qelb* (heart): Fig. (٣) Change of *qelb* (heart) to pl. *quluub* (hearts) where the underlined Vs denote sound alternation.



Most nouns pluralized in this form are mas, but they are turned into fem in pl.

Pattern: CeCC→CuCuuC **Template:** Feʿl **Alternation:** ١. Internal V mutation (e)→(u) ٢. Breaking the final CC by infixing a V (uu). Nouns pluralized through this form denote animals, birds; *nesr* (eagle)→*musuur* (eagles)/ *fehd* (leopard)→*fuhuud* (leopards). Tools; *keʿs* (cup)→*kuʿuus* (cups)/ *feʿs* (axe)→*fuʿuus* (axes). Bilateral words are doubled in the second C; *def* (drum)→*dufuuf* (drums), bodily parts; *reʿs* (head)→*ruʿuus* (heads)/ *enf* (nose)→*unuuf* (noses). If the word is bilateral or CvC, the second C is doubled; *kef* (palm)→*kufuuf* (palms). Groups; *šeʿb* (people)→*šuʿuub* (peoples)/ *wefd* (delegation)→*wufuud* (delegations). Landscape and weather; *sehl* (plain)→*suhuul* (plains)/ *thelj* (snow)→*thuluuj* (snows)/ *merj* (prairie)→*muruu* (prairies)/ *kehf* (cave)→*kuhuuf* (caves). Places, institutions; *benk* (bank)→*bunuuk* (banks). Periods; *šeʿr* (months)→*šuʿuur* (months)/ *ʿeśr* (era)→*ʿuśuur* (eras). Miscellaneous: *bend* (chapter/clause)→*bunuud* (chapters/clauses)/ *šeʿn* (affair)→*šuʿuun* (affairs). The second C in bilateral roots is doubled in pl.; *ref* (shelf)→*rufuuf* (shelves)/ *śef* (class)→*śufuuf* (classes)/ *fel* (remain)→*fuluul* (remains)/ *heb* (grain)→*hubuub* (grains).

Pattern: CiCC→CuCuuC **Template:** Fiʿl **Alternation:** ١. Internal V mutation (i)→(u) ٢. Breaking the final CC by infixing a V (uu), as in *ʿitr* (odor)→*ʿutuur* (odors)/ *qird* (ape)→*quruud* (apes)/ *śinf* (class)→*śunuuf* (classes)/ *sijn* (prison)→*sujuun* (prisons).

Pattern: CeCeC or CeCiC→CuCuuC **Template:** Feʿel **Alternation:** ١. Internal V mutation (e)→(u) ٢. Internal V Lengthening (i)→(uu). Examples are *esed*

(lion)→*usuud* (lions)/ *šeter* (line)→*šutuur* (lines)/ *melik* (king)→*muluuk* (kings)/ *nemir* (tiger)→*numuur* (tigers)

Pattern: Ce¹C→CuyuuC

Template: Fe¹i

Alternation: \.Internal V

shortening (ei)→(u) ʾ. Infixation of the C (y) ʿ. Infixation of the V (uu). In bilateral roots, the internal V is a diphthong, in which case it is deleted and /y/ is inserted instead to separate the two Vs and to avoid V sequence; *jeiš* (army)→*juyuuš* (armies)/ *ʿein* (eye)→*ʿuyuun* (eyes)/ *teir* (bird)→*tuyuur* (birds)/ *beit* (house)→*buyout* (houses)/ *jeib* (pocket)→*juyuub* (pockets).

٤. Fe¹alee/fewa¹il

Fe¹alee is the irregular pl. form that is used to pluralize mas as well fem nouns. It is used with Cʿ root words. However, the pl. root is quadrilateral (a four C root) in the form of CvCVCvC. If the first internal V is a long one, it will be replaced by (e+w). Hence, this (w) will be the four C added to the root of the sing. noun. The fig. below demonstrates the morphophonemic change in *ʿamil* (factor) to *ʿewamil* (factors);



Pattern: CaCiC→CewaCiC **Template:** Fa¹il→Fewa¹il **Alternation:** \.Infixation of a V (e) ʾ.Infixation of a C (w), e.g. *hatif* (telephone)→*hewatif* (telephones)/ *tabi¹* (stamp)→*tewabi¹* (stamps). In this category, there are a few words that denote places; *jami¹* (mosque)→*jewami¹* (mosques)/ *šari¹* (street)→*šewari¹* (streets)/ *šahid* (monument)→*šewahid* (monuments)/ *tabiq* (floor)→*tewabiq* (floors). Also, there are words that are water-related; *saʿil* (liquid)→*sewaʿil* (liquids)/ *rafid* (river branch)→*rewafid* (river branches)/ *saḥil* (coast)→*sewaḥil* (coasts)/ *qarib* (boat)→*qewarib* (boats). The above replacement helps to change the root of the noun from trilateral in sing. to quadrilateral in pl., having added (w) to the root of the noun. In all these words, the only change occurring is the replacement of the first internal V (a) with (e+w).

In fem. nouns, those ending with the suffix (-e), the same rule applies, except that the said suffix is elided. These nouns involve various senses, such as tools; *tabi¹e* (printer)→*tewabi¹* (printers)/ *barije* (warship)→*bewarij* (warships)/ *qafile* (caravan)→*qewafil* (caravans), and places; *nafiðe* (window)→*newafið*/ *qaʿide* (base)→*qewaʿid* (bases)/ *ʿaišme* (capital city)→*ʿewašim* (capital cities). Miscellaneous; *šaʿibe* (impurity)→*šewaʿib* (impurities)/ *fakihe* (fruit)→*fewakih* (fruits)/ *jariye* (maid)→*jewaree* (maids)/ *qafiye* (rhyme)→*qewafee* (rhymes)/ *ʿaʿile* (family)→*ʿewaʿil* (families). If the first V is short and the second one is long, and the word ends with (-e), the second V is replaced by (a) and the glottal C (?) is inserted to prevent the sequence of (a) and (i). As for the fem. suffix (-e), it is deleted. This is common in fem. nouns, as in; *fereede* (religious duty)→*feraʿid* (religious duties).

Pattern: CeCeeCe→CeCa?iC **Template:** Fe⁴eele→Fe⁴a?il **Alternation:**
 \.Internal V mutation (ee) →(a) ˇ.Internal V mutation of a C (?) ʁ.Infixation of a V (i) ɛ.
 Elision of the final V (e), nouns pluralized as such include *qeʕeede* (poem)→*qeʕa?id*
 (poems)/ *reheene* (hostage)→*reha?in* (hostages)/ *keteebe* (battalion)→*keta?ib*
 (battalions)/ *qebeele* (tribe)→*qeba?il* (tribes).

Here, the exception is the word *risale* (message), which has already (a) as a second V, and thus (?+i) is inserted in pl.; *resa?il* (messages). Nouns which are quadriliteral in root (consisting of four Cs), undergo internal V mutation, in addition to the anaptyxis of (a) relating to the pl. form, as in; *funduq* (hotel) →*fenadiq* (hotels)/ *zilzal* (quake)→*zelazil* (quakes)/ *ʔesker* (troop)→*ʔesakir* (troops). The fem. suffix (-e) is elided to correspond to the pl. form; *belbele* (confusion)→*belabil* (confusions)/ *mehzele* (farce)→*mehazil* (farces). The behavior of Vs varies in words, due to the different Vs contained in these words. Words ending with long V (ee) may have an insertion of (a) between the second and the final C root, as in *kursee* (chair)→*kerasee* (chairs). On the other hand, an orthographically similar word, like *nadee* (club), undergoes only insertion of (e+w) after the first C, and thus it is pluralized as *newadee* (clubs). Interestingly, such behavior can be noticed even in Cʁ root nouns. Here, a different set of sounds is introduced, represented by (e+y+a) instead of (e+w). This is confined to the nouns the first internal V of which is the diphthong (ei); *heikel* (skeleton)→*heyakil* (skeletons)/ *beideq* (pawn)→*beyadiq* (pawns). There are many words in SA which begin with the suffix *me-*, taking this type of pl. This prefix is non-root C, i.e., it is not original in the root, and it is added to these words to give the meaning of "a place where something is done", as such prefix is not in the Cʁ root of these words. It is the Cʁ root that implies the meaning of the stem, rather than the non-root C (*me-*). Hence, for example, in *mekteb* (office), the Cʁ root *k-t-b* implies the meaning of 'writing', from which that word takes its final meaning 'a place for writing.'

Additionally, a few pls. share the same template and form including names of animal, bird, or insect-related; *ʔaʕib* (herbivorous)→*ʔewaʕib* (herbivouroses)/ *zaʕif* (reptile)→*zewaʕif* (reptiles)/ *qariḏ* (rodent)→*qewariḏ* (rodents)/ *beheeme* (beast)→*beha?im* (beasts)/ *sinjab* (squirrel)→*senajib* (squirrels)/ *sulʕefat* (turtle)→*selahif* (turtles)/ *ʔeqreb* (scorpion)→*ʔeqarib* (scorpions)/ *newres* (seagull)→*newaris* (seagulls)/ *jariḥ* (bird of prey)→*jewariḥ* (birds of prey)/ *hewafir* (hoofs)/ *qewadim* (forelegs)/ *laḥim* (carnivorous)→*lewaḥim* (carnivorouses).

Pattern: meCCeC→meCaCiC **Template:** mef⁴el→mefa⁴il **Alternation:**
 \.Breaking the medial CC by infixing a long V (a) ˇ.Internal V mutation (e)→(i).
 Most words here imply 'a place where something is done'; *me ʔhed* (institute)→*me ʔahid* (institutes)/ *merfe?* (harbor)→*merafi?* (harbors)/ *merkez* (center)→*merakiz* (centers)/ *mesreḥ* (theatre)→*mesariḥ* (theatres) /*mel ʔeb* (stadium)→*mela ʔib* (stadiums)/ *menjem* (mine)→*menajim* (mines)/ *mesken* (residence)→*mesakin* (residences)/ *menfeḏ* (outlet)→*menafiḏ* (outlets)/ *mesbeḥ* (swimming pool)→*mesabiḥ* (swimming pools)/ *mekhzen* (store)→*mekhazin* (stores)/

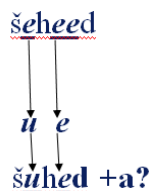
mešref (bank)→*mešarif* (banks)/ *metbekh* (kitchen)→*metabikh* (kitchens)/ *mešne*^ʔ (factory)→*mešani*^ʔ (factories)/ *met*^ʔ*em* (restaurant)→*meta*^ʔ*im* (restaurants).

There is another sense implied here that suggests a place through which something passes; *me*^ʔ*ber* (crossing)→*me*^ʔ*abir* (crossings)/ *medkhel* (entrance)→*medakhil* (entrances)/ *mekhrej* (exit)→*mekharij* (exits)/ *menfeð* (outlet)→*menafið* (outlets). Miscellaneous; *me*^ʔ*lem* (monument)→*me*^ʔ*alim* (monuments)/ *merkeb* (boat)→*merakib* (boats)/ *meqleb* (trick)→*meqalib* (tricks). In fem. nouns, the suffix (-e) is deleted; *menteqe* (area)→*menatiq* (areas)/ *mezre*^ʔ*e* (farm)→*mezari*^ʔ (farms)/ *medrese* (school)→*medaris* (schools)/ *meqbere* (cemetery)→*meqabir* (cemeteries)/ *me*^ʔ*reke* (battle)→*me*^ʔ*arik* (battles)/ *melheme* (epic)→*melaħim* (epics)/*merhele* (stage)→*merahil* (stages)/ *meħkeme* (court)→*meħakim* (courts)/ *methene* (mill)→*metahin* (mills). In Cʔ roots, the final V is changed to (ee). Again, the sense here has to do with place; *mešfa* (hospital)→*mešafee* (hospitals)/ *mešfa* (refinery)→*mešafee* (refineries)/ *meqha* (café)→*meqahee* (cafes)/ *mersa* (marina)→*merasee* (marinas)/ *melha* (cabaret)→*melahee* (cabarets). Exceptions in sense and in gender; *leila* (night)→*leyalee* (nights).

There are a few words that have the pre-final V as /i/ rather than /e/, with a locative sense, including; *mejlis* (session)→*mejalis* (sessions)/ *mesjid* (mosques)→*mesajid* (mosques)/ *menzil* (house)→*menazil* (houses)/ *mouqif* (situation)→*mewaqif* (situations)/ *mouqid* (fireplace)→*mewaqid* (fireplaces). Exceptions; *mourid* (resource)→*mewarid* (resources)/ *mousim* (season)→*mewasim* (seasons). Some words denote tools, instruments, equipment, .etc; *melbes* (cloth)→*melabis* (clothes)/ *medfe*^ʔ (cannon)→*medafi*^ʔ (cannons)/ *merjel* (boiler)→*merajil* (boilers)/ *mikbes* (button)→*mekabis* (buttons)/ *mekbeħ* (brake)→*mekabiħ* (brakes)/ *mi*^ʔ*oul* (pickax)→*me*^ʔ*awil* (pickaxes). However, if the third C is (y) or (?), it is elided along with the preceding and the following V and it will be replaced by the V (ee); *umniye* (wish)→*emane* (wishes)/ *uħjiye* (riddle)→*eħajee* (riddles)/ *uġniye* (song)→*eġanee* (songs)/ *uđhiye* (offering)→*eđahee* (offerings)/ *ina*^ʔ (pot)→*ewanee* (pots)/ *yed* (hand)→*eyadee* (hands). Animals; *seħliye* (lizard)→*seħalee* (lizards)/ *ef*^ʔ*a* (snake)→*efa*^ʔ*ee* (snakes). Landscapes; *šeħra*^ʔ (desert)→*šeħaree* (deserts)/ *ber* (wild)→*beraree* (wilds). It is worth mentioning that in all of these above words, if the first internal V is not a short one, it is also elided and (e+w) is inserted instead; *zoube*^ʔ*e* (storm)→*zewabi*^ʔ (storms)/ *šoume*^ʔ*e* (silo)→*sewami*^ʔ (silo)/ *qouqe*^ʔ*e* (shell)→*qewaqi*^ʔ (shells)/ *koukeb* (planet)→*kewakib* (planets)/ *noures* (seagull)→*newaris* (seagulls)/ *jouhere* (gem)→*jewahir* (gems).

•. fu^ʔela?

This form is used to derive irregular pl. for trilateral nouns that are mas. as a whole. The Cʔ root consists of three Cs and two Vs. The first V is a short or long V, but the second V is a long one. However, the pl. here is quadrilateral in root, as another C, that is (?), is added at the end of the sing. noun when pluralized. The final pl. form is: CvCvCvC or more precisely as CuCeCa?. The example below shows how *šeheed* (martyr) is pluralized as *šuheda*^ʔ (martyrs);



In pl., the quality of the first V is not changed (short to short);

Pattern: CeCeeC→CuCela?

Template: Fe^ʕeel→Fu^ʕela?

Alternation:

١. Mutation of the first internal V (e)→(u) ٢. Shortening of the second internal V (ee)→(e) ٣. Suffixation of (-a?). Most nouns here denote positions, occupations, and the like; *reʔees* (president)→*ruʔesaʔ* (presidents)/ *emeen* (secretary)→*umenaʔ* (secretaries)/ *ʕeḏeem* (great)→*ʕuḏemaʔ* (greats)/ *sefeer* (ambassador)→*suferaʔ* (ambassadors)/ *emeer* (prince)→*umeraʔ* (princes)/ *edeeb* (man of letters)→*udebaʔ* (men of letters)/ *fereeq* (rival)→*fureqaʔ* (rivals)/ *ʕemeed* (dean)→*ʕumedaʔ* (deans)/ *kheteeb* (orator)→*khutebaʔ* (orators)/ *ḥeleef* (ally)→*ḥulefaʔ* (allies)/ *kheleefe* (caliph/successor)→*khulefaʔ* (caliphs/successors). Additionally, there are certain nouns that imply specific temporary or permanent adjectives; *ḡereeb* (stranger)→*ḡurebaʔ* (strangers)/ *qedeem* (ancient)→*qudemaʔ* (ancients)/ *bekheel* (miser)→*bukhelaʔ* (misers)/ *neḏeer* (counterpart)→*nuḏeraʔ* (counterparts)/ *kereem* (generous)→*kuremaʔ* (generous ones).

Pattern: CaCiC→CuCela?

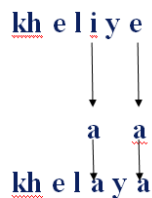
Template: Fa^ʕil→Fu^ʕela?

Alternation: ١.

Shortening of the first internal V (a)→(u) ٢. Mutation of the second internal V (i)→(e) ٣. Suffixation of (-a?), as in *ša ʕir* (poet)→*šu ʕeraʔ* (poets)/ *ʕalim* (scholar)→*ʕulemaʔ* (scholars)/ *baʔis* (miserable)→*buʔesaʔ* (miserable ones)/ *jahil* (ignorant)→*juhelaʔ* (ignorant ones)/ *jeban* (coward)/(coward)→*jubenaʔ* (cowards).

٦. fe^ʕaya

Fe ʕaya is an irregular pl. form used to pluralize fem. sing. nouns that are Cʕ or Cʕ in root, of which the root is CvCvCv. The pl. root is also CvCvCv. The morphophonemic representation of this pl. is *CeCaya*;



In *kheliye* (cell), the second and the final unwritten short Vs become orthographically written long Vs. Hence; *khelaya* (cells). The majority of nouns related are pluralized through this change;

Pattern: CeCiye → CeCaya

Template: Fe^ʕiye→Fe^ʕaya

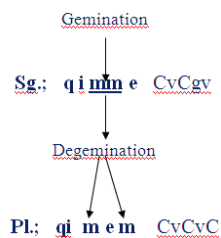
Alternation:

١. Lengthening of the second internal V (i)→(a) ٢. Lengthening of the second internal V (e)→(a), e.g. *weʕiye* (will)→*weʕaya* (wills)/ *re ʕiye* (subject)→*re ʕaya* (subjects)/ *hediye* (gift)→*hedaya* (gifts)/ *šediye* (fragment)→*šedaya* (fragments)/ *šebiye* (lass)→*šebaya* (lasses)/ *qed'iye* (issue)→*qed'aya* (issues)/

sejiye(character)→sejaya (characters)/ beliye (distress)→belaya (distresses)/ beqiye (remain)→beqaya (remains)/ ʔetiye (donation)→ʔetaya (donations). If the final C is (?), it is changed to (y) in pl.; kheteeʔe (sin) →khetaya (sins)/ khebeeʔe (hidden thing)→khebaya (hidden things)/ rezeʔe (calamity)→rezaya (calamities)/ mirʔa (mirror)→meraya (mirrors)/ ʔeḏaʔe (lizard)→ʔeḏaya (lizards). Words which are bilateral in root or which end with (y) or V, have this (y) or V deleted and (-aya) is affixed instead; beḡee (prostitutes)→beḡaya (prostitutes)/ sebee (captive)→sebaya (captives)/ neeye (intention)→newaya (intentions)/ meeze (merit)→mezaya (merits). Some nouns are already in pl. e.g. seḥaya (meningitis).

٧. fiʔel

Fi ʔel is a pl. form used to pluralize sing. fem. nouns, that are Cʔ or Cʕ in root. Nouns pluralized in this form can be classified into three main subtypes. The first subtype includes the bilateral nouns that consist of a C followed by a geminate, morphemically represented as CvCgv, where Cg stands for consonantal gemination. Gemination is the doubling of a single or certain C in the word. The Fig. below explains how such sing. nouns are pluralized;



What happens here is a degemination of the doubled C, and therefore the word *qimme* (summit), for example, becomes *qimem* (summits) in pl., by inserting a short unwritten V in between. Most nouns pluralized in this form take the form of CiCeC. As for the final V in the sing. noun, it is elided in pl.;

Pattern: CiCʔe

Template: Fiʔʔe→Fiʔeʔ

Alternation:

٧. Degemination of the second root C by infixing a V (e) ٧. Elision of the final V, nouns related are *qitte (cat)→qitet (cats)/ ʔille (cause)→ʔilel (causes)/ ḏimme (protection)→ḏimem (protections)/ ville (villa)→vilel(villas)/ himme (determination)→himem (determinations). The most significant morphophonemic change here is that bilateral root words become trilateral. Words can be unilateral (mono-consonantal); umme (nation) →umem (nations). Some nouns are always used in pl.; himem (lavas). But, if the word is already Cʕ in root, then only a short V is infixd to separate the final Cs.*

Abstract or ideational aspects; *ḥikme (wisdom)→ḥikem (wisdoms)/ ʔibre (moral)→ʔiber (morales). Jobs and occupations; mihne (job)→mihen (jobs)/ hirfe (profession)→hiref (professions). Collective groups or entities; furqe (band)→fureq (bands)/ kutle (bloc)→kutel (blocs)/ usre (family)→user (families). Miscellaneous; nisbe (portion)→niseb (portions)/ ibre (needle)→iber (needles)/ jumle (sentence)→jumel (sentences)/ kulfe (cost)→kulef (costs). (y) or (w) is inserted in*

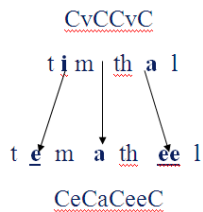
the bilateral nouns containing long Vs or diphthongs in the middle, to separate the surrounding short Vs and to avoid V sequence. Also, the final (-e) fem. suffix is deleted. Hence, such words are changed in root from bilateral in sing. to trilateral in pl.; *kheime* (tent)→*khiyem*/ *śeeġe* (format)→*śiyeġ* (formats)/ *seere* (biography)→*siyer* (biographies).

Λ. fe^ʔaleel

This is a pl. form used to derive the pl. of many mas. as well fem. sing. nouns that are C^ʔ or C^ʔ in root. The root of the pl. is quadrilateral; CvCvCvC, or more precisely as CeCaCeeC, for quadrilateral sing. nouns, and CeWaCeeC for trilateral sing. nouns. This pl. root is shown in the Fig. below. Sing. noun in C^ʔ root; *qamuus* (dictionary) to pl. *qewamees* (dictionaries)



Sing. noun in quadrilateral root; *timthal* (statue) to pl. *tematheel* (statues)



Pattern: MiCCaC→MeCaCeeC

Template: Mif^ʔal→Mefa^ʔeel

Alternation: ١. mutation of the first internal V (i) → (e) ٢. Infixation of a long V (a) ٣. Mutation of the second internal V (a)→ (ee). Nouns pluralized here mostly denote tools, equipment, devices, and the like; *miśbaħ* (lamp)→*meśabeeħ* (lamps)/ *finjan* (cup)→*fenajeen* (cups)/ *mizmar* (pipe)→*mezameer* (pipes)/ *miħrar* (thermometer)→*meħhareer*/ *mismar* (nail)→*mesameer* (nails)/ *minšar* (saw) *menašeer* (saws)/ *miqdar* (measure)→*meqadeer* (measures). Included in this are a few fem. nouns; *qaruure* (glass)→*qewareer* (glasses)/ *masuure* (pipe)→*mewaseer* (pipes)/ *taħuune* (mill)→*tewaħeen* (mills). Others denote animals; *sinjab* (squirrel)→*senajeeb* (squirrels)/ *timsaħ* (crocodile)→*temaseeħ* (crocodiles). Some other nouns may refer to written things; *teśreeħ* (permission)→*teśareeħ* (permissions)/ *tefseer* (interpretation)→*tefaseer* (interpretations)/ *teqreer* (report)→*teqareer* (reports)/ *tewqee^ʔ* (signature)→*tewaqee^ʔ* (signatures)/ *tareekh* (date)→*tewareekh* (dates). Natural or emotional aspects; *i^ʔśar* (storm)→*e^ʔaśeer* (storm)/ *iħsas* (feeling)→*eħasees* (feelings).

Pattern: CaCuuC→CewaCeeC

Template: Fa^ʔuul→Fewa^ʔeel

Root: C^ʔ→

C^ʔ Alternation: ١. Infixation of the syllable (ew) ٢. Mutation of the second internal V (uu)→(ee). Again, some nouns here are concerned with tools, devices, or equipment; *tabuut* (coffin)→*tewabeet* (coffins)/ *śaruukħ* (missile)→*śewareekh* (missiles)/ *ħasuub* (computer)→*ħewaseeb* (computers)/ *fānuus* (lantern)→*fewanees*

(lanterns)/ *ibreeq* (kettle)→*ebareeq* (kettles)/ *sikkeen* (knife)→*sekakeen* (knives). Abstract laws, regulations, or non-animate aspects; *kabuus* (nightmare)→*kewabees* (nightmares)/ *namuus* (laws of nature)→*newamees* (laws of nature)/ *qanuun* (law)→*qewaneen* (laws). Animate attributes; *taġuut* (tyrant)→*tewaġeet* (tyrants)/ *śindeed* (valiant)→*śenadeed* (valiant ones)/ *jasuus* (spy)→*jewasees* (spies)/ *tilmeeð* (pupil)→*telameeð* (pupils). Birds or animals; *tawuus* (peacock)→*tewawees* (peacocks)/ *betreeq* (penguin)→*betareeq* (penguins). Imaginary entities or creatures; *tinneen* (dragon)→*tenaneen* (dragons)/ *ʔifreet* (demon)→*ʔefareet* (demons). Activities or actions; *timreen* (exercise)→*temareen* (exercises)/ *ikleel* (wreath)→*ekaleel* (wreaths). Locative references; *tabuur* (queue)→*tewabeer* (queues)/ *iqleem* (region)→*eqaleem* (regions). In SA, there are certain nouns are always used in pl.; *metarees* (barricades)/ *teraweesh* (nightly prayers at Ramadan)/ *te ʔaleem* (teachings)/ *tefaʔeel* (details)/ *te ʔabeer* (expressions)/ *tebaʔeer* (good or early news)/ *heðafeer* (sides)/ *esareer* (facial lineaments)/ *eqaweel* (telltale). In trilateral nouns with the first internal V is a long one (ei) or (ee), this long V is shortened to (e) and (ya) is infixed. As for the second internal V, it is mutated to (ee); *meidan* (square)→*meyadeen* (squares). Most words here have to do with measurement or the related senses; *meezan* (scale)→*mewazeen* (scales)/ *mee ʔad* (appointment)→*mewa ʔeed* (appointments)/ *meeqat* (appointed time)→*mewaġeet* (appointed times)/ *deenar* (dinar)→*denaneer* (dinars). Some nouns are borrowings; *sirdab* (vault)→*seradeeb* (vaults)/ *fustan* (dress)→*fesateen* (dresses)/ *dihleez* (vestibule)→*dehaleez* (vestibules)/ *bintal* (trousers)→*benateel* (trousers)/ *sirwal* (pants)→*seraweel* (pants)/ *derweesh* (dervish)→*deraweesh* (dervishes)/ *bermeel* (barrel)→*berameel* (barrels)/ *dulfeen* (dolphin)→*delafeen* (dolphins).

Pattern: CuCʔaC

Template: Fuʔʔal→Feʔaʔeel

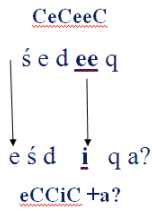
Root: Cʔ

Alternation: ʔ. Mutation of the first internal V (u)→(e) ʔ. Degemination of the internal C geminate by infixing a V (a) ʔ. Mutation of the second internal V (a)→(ee) Animals, birds, or insects; *thu ʔban* (snake)→*the ʔabeen* (snakes)/ *ʔuśfiur* (sparrow)→*ʔeśafeer* (sparrows)/ *dubbuur* (hornet)→*debabeer* (hornets). Animate or human attributes; *rubban* (captain)→*rebabeen* (captains)/ *śultan* (sultan)→*śelateen* (sultans)/ *menduub* (envoy)→*menadeeb* (envoys). Locative references; *šubbak* (window)→*šebabeek* (windows)/ *bustan* (garden)→*besateen* (gardens). Natural aspects or phenomena; *ukhduud* (groove)→*ekhadeed* (grooves)/ *uħfiur* (fossil)→*eħafeer* (fossils)/ *burkan* (volcano)→*berakeen* (volcanoes). Tools or equipment; *unbuub* (pipe)→*enabeeb* (pipes)/ *śunduūq* (box)→*śenadeeq* (boxes)/ *dubbuus* (pin)→*(debabees)*/ *śunbuur* (faucet)→*śenabeer* (faucets). Written works; *ʔunwan* (address)→*ʔenaween* (addresses)/ *dustuur* (constitution)→*desateer*/ *utruuħe* (thesis)→*etareeh* (theses). Spiritual, religious, or mythical associations; *qurban* (offering)→*qerabeen* (offerings)/ *uśtuure* (legend)→*eśateer* (legends)/ *te ʔweeðe* (charm)→*te ʔaweeð* (charms)/ *terneeme* (hymn)→*teraneem* (hymns).

ʔ. efʔila?

Efʔila? is an irregular form for mas. nouns. Nouns pluralized in this form are Cʔ or Cʔ in root, formed as CvCv or CvCvC. In pl., two suprafixes, which are not lexically

found in the sing. root, are added. The first is an initial V (prothesis) and the second one is the V (a) + the C (?). As for the internal changes, they are mostly restricted to the change of the long V to a short unwritten one, and the elision of the first short V. The word *śedeeq* (friend) becomes *esdiqa?* (*friends*) through this morphophonemic change:



Hence, words which are trilateral in sing. become quadrilateral in pl., as another C is added to the root. The following are examples of such words, that undergo the same change in pl.;

Pattern: CeCeeC→eCCiCa? **Template:** Fe^qeel→ef^qila? **Root:** C^ʔ→C^ʔ
Alternation: ١. Prefixation of a V (e) ٢. Elision of the first internal V (e) ٣. Shortening of the final V (ee)→(i) ٤. Suffixation of (ya?). Examples are *beree?* (*innocent*)→*ebriya?* (*innocents*)/ *qereeb* (*relative*)→*eqriba?* (*relatives*). In nouns where the last two root Cs are identical, they are merged into a single C geminate. Most words of this category are either nouns; *reqeeq* (*slave*)→*eriqqa?* (*slaves*)/ *deleel* (*guide*)→*edilla?* (*guides*)/ *tebeeb* (*doctor*)→*etibba?* (*doctors*), or attributes; *śedeed* (*tough*)→*śhidda?* (*tough ones*)/ *ʔezeez* (*dear*)→*e ʔizza?* (*dear ones*)/ *ħebeeb* (*beloved*) →*iħibba?* (*beloved ones*). Further to the above, there are several nouns that are bilateral in root (containing two Cs in sing. case), which also become trilateral in pl. The said words are often CvCv, or CeCee. In pl., the first short V is elided, while the second V at the end, which is usually a diphthong, is not only elided, but is also replaced by a short V and then followed by (y) to avoid sequence with the following V;

Pattern: CeCee→eCCiya? **Template:** Fe^qee→ef^qiya? **Root:** C^ʔ→C^ʔ
Alternation: ١. Prefixation of a V (e) ٢. Elision of the internal V (e) ٣. Final V shortening (ee)→(i) ٤. Suffixation of the syllable (ya?). Except for the noun *nebee* (*prophet*)→*enbiya?* (*prophets*), most nouns here denote animate attributes; *theree* (*rich*)→*ethriya?* (*rich ones*)/ *ðekee* (*smart*)→*eðkiya?* (*smart ones*)/ *ġebee* (*stupid*)→*eġbiya?* (*stupid ones*)/ *ġenee* (*rich*)→*eġniya?* (*rich ones*)/ *śeqee* (*wretched*)→*eśqiya?* (*wretched ones*)/ *qewee* (*strong*)→*eqwiya?* (*strong ones*). Moreover, if the first C in the root is (w), it is substituted by the long V (ou); *wēsee* (*custodian*)→*ouśiya?* (*custodians*)/ *welee* (*patron*)→*ouliya?* (*patrons*)/ *wefee* (*loyal*)→*oufiya?* (*loyal ones*).

١٠. fu^qal

This an irregular pl. form to change sing. mas nouns into pl. Such nouns are C^ʔ in root, mostly as *Fa ʔil*, or CvCvC (CaCiC). In addition, the second C in the root is doubled to form an internal gemination. A given pl. can be represented as follows;

CaCiC
 k a t i b
 ↓ ↓
 k u t t a b
 CuCgaC

In this Fig., *katib* (writer) is changed to *kuttab* (writers). In brief, the change from sing. to pl. involves an internal mutation of Vs; the first long V becomes a short unwritten V, and the second short unwritten V becomes a long written V, plus the doubling of the medial C.

Pattern: CaCiC → CuC^ʾaC

Template: Fa^ʾil → Fu^ʾal

Root: C^ʾ

Alternation: ١. Internal V shortening (a) → (u) ٢. Gemination of the internal C ٣. Internal V lengthening (i) → (a). In general, the majority of nouns here suggest the sense of ‘one who does or performs’, hence; *ħaris* (guard) → *ħurras* (guards)/ *ħakim* (ruler) → *ħukkam* (rulers)/ *qariʿ* (reader) → *qurraʿ* (readers)/ *naqid* (critic) → *nuqqad* (critics)/ *ḍabit* (officer) → *ḍubbat* (officers)/ *malik* (owner) → *mullak* (owners)/ *ṣaniʿ* (maker) → *ṣunnaʿ* (makers)/ *rakib* (passenger) → *rukkaḥ* (passengers). Permanent or temporary attributes; *ʿazib* (bachelor) → *ʿuzzab* (bachelors)/ *ʿašiq* (lover) → *ʿuššaq* (lovers)/ *fajir* (wanton) → *fujjar* (wantons)/ *ʿaḍil* (blamer) → *ʿuḍḍal* (blamers)/ *kafir* (disbeliever) → *kuffar* (disbelievers). Positions or occupations; *kahin* (priest) → *kuhhan* (priests)/ *tajir* (tradesman) → *tujjar* (tradesman)/ *waʿid* (preacher) → *wuʿad* (preachers)/ *ṭalib* (student) → *ṭullab* (students)/ *ʿamil* (worker) → *ʿummāl* (workers). There is also a sense of over-performing of things, duties, or jobs, as in; *zahid* (ascetic) → *zuḥḥad* (ascetics)/ *ʿabid* (worshipper) → *ʿubbad* (worshippers). If the second C is (?), it is changed to (w) in pl.; *zaʿir* (visitor) → *zuwwar* (visitors)/ *raʿid* (pioneer) → *ruwwad* (pioneers)/ *saʿih* (tourist) → *suwwaḥ* (tourists)/ *naʿib* (deputy) → *nuwwab* (deputies). The few words which are C^ʾ in root become C^ʾ in pl. The form of these words in sing., which is (CaC), becomes CuCCan. The internal long V (a) becomes a short unwritten one (u), the second C is doubled, and thus forming a gemination, and (a+n) is added at the end; *šab* (youngman) → *šubban* (youngmen). Notwithstanding this change which is limited to a very few words in SA, there is a similar word that shows a slightly minor change to the above; *ħaj* (pilgrim) → *ħujjaḥ* (pilgrims).

١١. Fe^ʾalile

This is quite uncommon form of irregular pl. being restricted to quadriliteral or quinqueliteral words or words borrowed from other languages.

Pattern: CeCCeCee → CeCaCiCe

Template: Fe^ʾlelee → Fe^ʾalilie

Root: C^ʿ

Alternation: ١. Breaking the medial CC by infixing a V (a) ٢. Internal V mutation (e) → (i) ٣. Shortening of the final V (ee) → (e). Words here are either positions or attributes; *šeidelee* (pharmacist) → *šeyadile* (pharmacists)/ *ʿebqeree* (genius) → *ʿebaqire* (geniuses).

Pattern: CuCCan → CeCaCiCe

Template: Fu^ʾlan → Fe^ʾalilie

Root: C^ʿ

Alternation: ١. Internal V mutation (u) → (e) ٢. Breaking the medial CC by infixing

a V (a) ʾ. Shortening of the internal V (a) →(i) ɛ. Suffixation of a V (e). Positions or occupations; *qursān* (pirate)→*qerasīne* (pirates)/ *rubban* (captains)→*rebabine* (captains)/ *duhqan* (chief)→*dehaqine* (chiefs). Included in this are the nouns which are Arabicized or loanwords; *feilesuuf* (philosopher)→*felasife* (philosophers)/ *duktor* (doctor)→*dekatire* (doctors)/ *ustaḏ* (master/professor)→*esatiḏe* (masters/professors)/ *qubtan* (captain)→*qebatine* (captains)/ *jillouz* (policeman)→*jelawize* (policemen)/ *zibnee* (keeper of order)→*zebaniye* (keepers of order)/ *simsar* (broker/agent)→*semasire* (brokers/agents). Some nouns are always in pl.; *sewasiye* (equals) from *sewa?* (equal). Compound nouns, or nouns which are C^o (consisting of five Cs as a root), which is very rare in SA; *ʿebdullah* (Abdullah)→*ʿebadile* (persons called Abdullah). Ethnic associations; *ṣihyonee* (Zionist)→*ṣehayine* (Zionists). Nouns borrowed from Greek or Latin that refer to the titles of kings, monarchs, rulers, etc.; *imberator* (emperor)→*ebatire* (emperors)/ *kisra* (Chosroe)→*ekasire* (Chosroes)/ *qeiser* (Caesar)→*qeyasire* (Caesars)/ *fir ʿoun* (Pharaoh)→*fera ʿine* (Pharaohs). Of which are the words that refer to religious ranks, positions, etc, whether they are SA as in; *qes* (vicar)→*qesawise* (vicars)/ *usquf* (bishop)→*esaqife* (bishops)/ *khuuree* (vicar)→*khewarine* (vicars)/ *shemmas* (deacon)→*shemamise* (deacons), or borrowed from other languages, such as; *kardeenal* (cardinal)→*keradile* (cardinals)/ *metran* (archbishop)→*metarine* (archbishops)/ *betreerik* (patriarch)→*betarike* (patriarch). The words *kardeenal* and *betreerik* are pluralized as *keradile* and *betarlike* respectively, by eliding the final or the pre-final C in the sing. root. This is due to the fact that the above words are C^o in root, and having a five C root is not a possible sequence in SA. However, in *imberator*, which is C^o in root too, the pl. is *ebatire*, as two Cs have been elided to model the required form of pl. sequence *Fe ʿalile*. There are the nouns that refer to ethnic or historical groups, peoples, nationalities, including religious or political groups or entities and the like. Such nouns are often quadriliteral and are used almost in pl.; *menaḏire* (Muntherids)/ *beramike* (Barmakids)/ *ye ʿaqibe* (Jacobbeans)/ *ḥenabile* (Puritans)/ *ye ʿarube* (Yarubids)/ *ṣeqalibe* (Slavs)/ *betalime* (Ptolemaics)/ *qebariṣe* (Cypriots)/ *efariqe* (Africans)/ *meḡaribe* (From the Maghreb countries)/ *belaṣife* (Bolsheviks)/ *menaṣife* (Mensheviks)/ *selajiqe* (Seljuks) /*ḡesasine* (Ghassanids)/ *qeramite* (Carmatians)/ *mewarine* (Maronites)/ *ezariqe* (Ezariqids)/ *Eḡalibe* (Aghlabids). In addition, there are some words which denote extraordinary qualities or characters, such as; *jehbeḏ* (great scholar)→*jehabiḏe* (great scholars)/ *ʿimlaq* (giant)→*ʿemaliqe* (giants)/ *jebbar* (titan)→*jebbabire* (titan)/ *berberee* (Barbarian)→*berabire* (Barbarians)/ *melak* (angel)→*melaʿike* (angels). Miscellaneous; *ṣoulejan* (scepter)→*ṣewaliqe* (scepters)/ *niṣtoori* (Nestorian)→*neṣatire* (Nestorians).

١٢. Fe ʿale

Fe ʿale is a pl. form used to pluralize a few mas. nouns that are C^ʿ in root. In changing from sing. to pl., the only change that occurs in these nouns is the addition of the short V (e) at the end, as the sing. form is already *Fe ʿal* (CvCgvC), the first V is a short unwritten one, whilst the second V is a long orthographic one. Hence;

Pattern: CeCʿaC→CeCʿaCe **Template:** Feʿʿal→Feʿʿale

Root: Cʿ

Alternation: ١. Elision of the final V (e). Nouns pluralized here are mostly positions or occupations; *keššaf* (scout)→*keššafe* (scouts)/ *kheyyal* (horseman)→*kheyyale* (horseman)/ *hejjan* (camel rider)→*hejjane* (camel riders)/ *rehħal* (globetrotter)→*rehħale* (globetrotters)/ *beħhar* (sailor)→*beħhare* (sailors)/ *qennaś* (sniper)→*qennaśe* (snipers).

١٣. Faʿe

This is a very minor type of irregular pl., since the words pluralized through it are handful. These words are Cʿ in root; based on CaʿiC. In pl., the medial C (?) is elided along with the following short V, and only the first and the final Cs are kept, and the short orthographic V (e) is suffixed at the end.

Pattern: CaʿiC → CaCe

Template: Faʿiʿ→Faʿe

Root: Cʿ→Cʿ

Alternation: ١. Elision of the internal C (?). ٢. Elision of the internal V (i). ٣. Suffixation of a V(e). Nouns pluralized through this pattern are mostly positions or occupations or the sense of one who does something; *baʿiʿ* (salesman)→*baʿe* (salesmen)/ *qaʿid* (leader)→*qade* (leaders)/ *šaʿiġ* (goldsmith)→*śaġe* (goldsmiths)/ *saʿis* (header)→*sase* (headers). Where the medial C is a long V or (y) followed by V, this sequence, including (y), is elided with the final C is retained; *seiyid* (mister)→*sade* (misters).

١٤. Fuʿa

Fuʿa is a rarely used form to derive irregular pl. Only a few words, fem. trilateral nouns, are pluralized through this form.

Pattern: CeCye→CuCa **Template:** Feʿye→Fuʿa

Root: Cʿ→Cʿ

Alternation: ١. Mutation of the first internal V (e)→(u). ٢. Elision of the prefinal C (y). ٣. Lengthening of the final V (e)→(a), as in *qerye* (village)→*qura* (villages)/ *ruʿye* (vision)→*ruʿa* (visions)/ *dumye* (doll)→*duma* (dolls)/ *kunya* (cognomen)→*kuna* (cognomens)/ *ruqye* (spell)→*ruqa* (spells)/ *bunye* (structure)→*buna* (structures).

Pattern: CuCwe→CuCa

Template: Fuʿwe→Fuʿa

Root: Cʿ→Cʿ

Alternation: ١. Elision of the final C (w). ٢. Lengthening of the final V (e)→(a), as in *ʿurwe* (bond)→*ʿura* (bonds)/ *quwwe* (force/power)→*quwa* (forces/powers).

Pattern: CiCye→CiCa **Template:** Fiʿye→Fiʿa

Root: Cʿ→Cʿʿa

Alternation: ١. Elision of the final C (y). ٢. Lengthening of the final V (e)→(a), as in the nouns *fidye* (ransom)→*fida* (ransoms)/ *jizye* (tax)→*jiza* (taxes)/ *ʿiduu* (enemy)→*ʿida* (enemies)/ *nuwat* (nucleus)→*newa* (nuclei).

١٥. F(i/u)ʿlan

A form of irregular pl. to pluralize trilateral mas. nouns.

Pattern: CiCC→CiCCan **Template:** Fi^ʕl→Fi^ʕlan **Root:** C^ʔ/ C^ʕ→C^ʕ
Alternation: ١. Internal V mutation (e) → (i) ٢. Suffixation of (an). Categories here involve animals or birds; *jirð* (rat)→*jirðan* (rats)/ *feʔr* (mouse)→*fiʔran* (mice)/ *ġurab* (crow)→*ġirban* (crows)/ *ġezal* (deer)→*ġizlan* (deer). Miscellaneous; *jidar* (wall)→*jidran* (walls)/ *šebee* (boy)→*šibyan* (boys).

Pattern: CaCiC→CuCCan **Template:** Fa^ʕil→Fu^ʕlan **Root:** C^ʕ→C^ʕ
Alternation: ١. Shortening of the first internal V (a)→(u) ٢. Elision of the second internal V (i) ٣. Suffixation of (an), as in *šatiʔ* (beach)→*šutʔan* (beaches)/ *faris* (knight)→*fursan* (knights)

Pattern: C(u/i/e)CaC→CiCCan **Template:** Fu^ʕal→Fu^ʕlan **Root:** C^ʕ→C^ʕ
Alternation: ١. Internal V mutation (u)→(i) ٢. Elision of the second internal V (a) ٣. Suffixation of (an) to the end of the noun, as in *šujaʕ* (brave)→*šijʕan* (braves)/ *ġulam* (boy)→*ġilman* (boys).

Pattern: CeCeeC→CuCCan **Template:** Fe^ʕeel → Fu^ʕlan **Root:** C^ʕ→C^ʕ
Alternation: ١. Internal V mutation (e) → (u) ٢. Elision of the second internal V (ee) ٣. Suffixation of (an), as in *ketheeb* (sandhill)→*kuthban* (sandhills)/ *qemees* (shirt)→*qumšan* (shirts)/ *qedʕeeb* (rod)→*qudʕban* (rods)/ *kheleej* (gulf)→*khuljan* (gulfs).

Pattern: CeCeC→ CuCCan **Template:** Fe^ʕel → Fu^ʕlan **Root:** C^ʕ→C^ʕ
Alternation: ١. Internal V mutation (e) →(u) ٢. Elision of the second internal V (e) ٣. Suffixation of (an), as in *weled* (boy)→*wuldan* (boys)/ *beled* (country)→*buldan* (counties). Some include nationalities: *siryan* (Syriacs)/ *tilyan* (Italians)/ *elman* (Germans). This also includes bilateral nouns: *wadee* (valley)→*widyan* (valleys).

١٦. Fe^ʕel

Feʕel is an irregular pl. form used to derive the pl. of a few mas. nouns, most of which are C^ʕ in root.

Pattern: CaCiC→CeCeC **Template:** Fa^ʕil→fe^ʕel **Root:** C^ʕ
Alternation: ١. Shortening of the first internal V (a)→(e) ٢. Internal mutation of the second V (i)→(e). Examples are nouns denoting positions or occupations; *khadim* (servant)→*khedem* (servants, mas. & fem.)/ *ħaris* (guard)→*ħeres* (guards)/ *khefeer* (sentinel)→*khefer* (sentinels).

Pattern: CeCeCee→ CeCeC **Template:** Fe^ʕelee→Fe^ʕel **Root:** C^ʕ
Alternation: ١. Elision of the final V (ee), as in *ʕerebee* (Arab)→*ʕereb* (Arabs)/ *ġejeree* (Gypsy)→*ġejer* (Gypsies)/ *bešeree* (human being)→*bešer* (human beings)/ *teteree* (Tartar)→*teter* (Tartars)/ *hemejee* (barbaric)→*hemej* (barbaric ones). Collective nouns (nouns referring to pl. non-animate entities regardless of gender or number); *šej* (tree), *semek* (fish), *šekher* (rock), *hejer* (stone), *beqer* (bovines), *ġenem* (sheep), *bejeʕ* (swans), and *wereq* (paper) can also be included in this category.

١٧. Fe^ʿeel

This form is used to pluralize a few mas. trilateral or bilateral nouns.

Pattern: CaC→CeCeeC^x **Template:** Fa^ʿ→Fe^ʿee^ʿ **Root:** Cʿ→Cʿʿ
Alternation: ١. Shortening of the internal V: (a)→(e) ٢. Infixation of a V (ee)
٣. Reduplication of the second root C, e.g. *haj* (pilgrim)→*hejeej* (pilgrims)

Pattern: CeCC→CeCeeC **Template:** Fe^ʿl→Fe^ʿeel **Root:** Cʿ
Alternation: ١. Breaking the final CC by inserting the epenthetical V (ee), as in
ʿebd (slave)→*ʿebeed* (slaves)

Pattern: Change: CiCaC→CeCeeC **Template:** Fi^ʿal→Fe^ʿeel **Root:** Cʿ
Alternation: ١. Internal V mutation; (i)→(e)/ (a)→(ee), as in; *himar* (donkey)→*hemeer* (donkeys).

١٨. Fe^ʿele

Fe^ʿele is a pl. form to pluralize trilateral mas. nouns.

Pattern: CaCiC→CeCeCe **Template:** Fa^ʿil→Fe^ʿele **Root:** Cʿ
Alternation: ١. Shortening of the first internal V (a)→(e) ٢. Mutation of the second internal V (i)→(e) ٣. Suffixation of a V (e). Nouns pluralized as such are positions; *talib* (students)→*telebe* (students, mas. & fem.)/ *sadin* (keeper)→*sedene* (keepers)/ *sahir* (magician)→*sehere* (magicians)/ *ʿajiz* (disabled)→*ʿejeze* (disabled people)/ *kasib* (wage-earner)→*kesebe* (wage-earners). Permanent or temporary attributes; *qatil* (murderer)→*qetele* (murderers)/ *khaʿin* (traitor)→*khewene* (traitors)/ *mahir* (skilled)→*mehere* (skilled ones)/ *warith* (inheritor)→*werethe* (inhereitors)/ *safil* (mean)→*sefele* (mean ones)/ *jahil* (ignorant)→*jehеле* (ignorant ones).

١٩. Ef^ʿul

Ef^ʿul is a form of irregular pl. to pluralize mas. and fem. trilateral nouns.

Pattern: CeCC→eCCuC **Template:** Fe^ʿl→ef^ʿul **Root:** Cʿ
Alternation: ١. Prefixation of a V (e) ٢. Elision of the internal V (e) ٣. Breaking the final CC by infixing a short V (u) between the final Cs. Examples on this alternation include *nefs* (self)→*enfus* (selves)/ *nehr* (river)→*enhur* (rivers)/ *herf* (letter)→*ehruf* (letters)/ *fer*^ʿ (branch)→*efru*^ʿ (branches).

Pattern: CiCaC→eCCuC **Template:** Fi^ʿal→ef^ʿul **Root:** Cʿ
Alternation: ١. Prefixation of a V (e) ٢. Elision of the internal V (i) ٣. Shortening of the second internal V (a)→(u). Nouns related involve bodily parts; *lisan* (tongue)→*elsun* (tongues)/ *ḍira*^ʿ (arm)→*eḍru*^ʿ (arms)/ *ʿein* (eye)→*e*^ʿyun (eyes)/ *rijl* (leg)→*erjul* (legs), in addition to body-related actions; *yemeen* (oath)→*eimun* (oaths). Miscellaneous; *ṣeter* (line)→*eṣtur* (lines).

ʔ. Fee^ʔal

Fee^ʔal is a very rare type of irregular pl. in SA. It is used to pluralize mas as well as fem. bilateral nouns. In bilateral nouns based on CvC template, the medial V is altered to (ee), and (-an) is added to the end of the noun. The following table explains this alteration.

Pattern: CaC→CeeCan **Template:** Fa^ʔ→Fee^ʔan **Root:** Cʔ→Cʔ
Alternation: ʼ. Internal V mutation (a)→(ee) ʔ. Suffixation of (an)

Sing. root template	alternation	ultimate pl. template
CvC	C[v~ee]C+an	CeeCan
saq (leg)	s-a~ee-q	seeqan (legs)
nar (fire)	n-a~ee-r	neeran (fires)
jar (neighbor)	j-a~ee-r	jeeran (neighbors)
qa ^ʔ (seabed)	q-a~ee- ^ʔ	qee ^ʔ an (seabed)
bab (door)	b-a~ee-b	beeban (doors)
taj (crown)	t-a~ee-j	teejan (crowns)
ʔuud (stick)	ʔ-uu~ee-d	ʔeedan (sticks)
duud (worm)	d-uu~ee-d	deedan (worms)
ġuul (ghoul)	ġ-a~ee-l	ġeelan (ghoul)
ħuut (whale)	ħ-uu~ee-t	heetan (whales)
thour (bull)	th-ou~ee-r	theeran (bulls)
śuuś (chick)	ś-uu~ee-ś	śeeśan (chicks)

If the noun is Cʔ in root, the same alterations occur, except that the medial C, along with the following V, is elided: *ħaʔit* (wall)→*heetan* (walls). Accordingly, both (?) and (i) are elided in this example.

ʔ. Fi^ʔele

A rarely used form of irregular pl. *Fi^ʔele* is used to pluralize mas. bilateral, as well as trilateral, nouns.

Pattern: CiCeCe **Template:** Fi^ʔele **Root:** Cʔ→Cʔ
Alternation: ʼ. Internal V mutation: (u)→(i) ʔ. Infixation of a short V (e)
ʔ. Reduplication of the second root C ʔ. Suffixation of a V (e). Words related are mostly concerned with animals and birds; *dub* (bear)→*dibebe* (bears)/ *hir*

(cat)→*hirere* (cats)/ *qird* (ape)→*qirede* (apes)/ *feel* (elephant)→*fiyele* (elephants)/ *deek* (cock)→*diyeke* (cocks).

ᶑᶑ. Fi^ᶑee

A rarely used form of irregular pl. *Fi^ᶑee* is used to pluralize fem. bilateral as well as trilateral nouns.

Pattern: CiCee **Template:** Fi^ᶑee **Alternation:** ١. Internal V mutation: (e)→(i) ٢. Final V mutation: (a) →(ee), as in *ᶑeśa* (stick/cane)→*ᶑiśee* (sticks/canes)/ *ḥulye* (jewel)→*ḥilee* (jewels).

ᶑᶑ. Efi^ᶑᶑe

Efi^ᶑᶑe is a form of irregular pl. This pl. is used with trilateral mas. nouns. In changing from sing. to pl., the root loses the second long V in favor of a medial gemination between the second and the final C. Further, two Vs are affixed to the noun; initially and finally. The few sing. nouns pluralized in this form are based either on CvCeeC or CvCaC.

Pattern: CeCeeC→eCiC^ᶑe **Template:** Fe^ᶑeel→efi^ᶑᶑe **Root:** C^ᶑ→C^ᶑ
Alternation: ١. Prefixation of a V (e) ٢. Mutation of the first internal V (e)→(i)
 ٣. Elision of the second internal V (ee) and thus an internal C geminate is formed
 ٤. Suffixation of a V (e), as in *jeneen* (fetus)→*ejinne* (fetuses)/ *ḥebeeb* (sweet)→*ehibbe* (sweets)/ *sereer*(bed)→*esirre* (beds)/ *deleel* (evidence)→*edille* (evidences).

Pattern: CiCaC→eCiC^ᶑe **Template:** Fi^ᶑal **Root:** C^ᶑ→C^ᶑ
Alternation: ١. Prefixation of the V (e) ٢. Elision of the second internal V (a) and thus an internal C gemination is formed ٣. Suffixation of the V (e), for instance *hilal* (crescent)→*ehille* (crescents)/ *imam* (Imam)→*e?imme* (Imams)/ *ṣu^ᶑa^ᶑ* (ray)→*eṣi^ᶑᶑe* (rays). In *e?imme* (Imams), the epenthetical (?) is inserted between the intrusive (e) and the following C so as to prevent V sequence, whereas the two Cs are reduced into a C geminate. This is because the noun is biliteral and thus another C is needed to model the pl. pattern.

ᶑᶑ. Fu^ᶑuul

Fu^ᶑuul is a form of pl. that is used to pluralize bilateral mas. nouns.

Pattern: CeC→CuCuuC^x Where (C^x) is a reduplicated C; **Template:** Fe^ᶑ→Fu^ᶑuu^ᶑ **Root:** C^ᶑ→C^ᶑ **Alternation:** ١. Internal V mutation (e)→(u)
 ٢. Infixation of a long V (uu) ٣. Reduplication of the second root C. The nouns pluralized here may indicate bodily parts and physical portions; *kef* (palm)→*kufuuf* (palms)/ *fek* (jaw)→*fukuuk* (jaws)/ *ṣeq* (crack)→*ṣuquuq* (cracks)/ *khed* (cheek)→*khuduud* (cheeks)/ *feś* (stone)→*fuśsuuś* (stones)/ *fel* (remain)→*fuluul* (remains). Miscellaneous; *ḥel* (solution)→*ḥuluul* (solutions)/ *fen* (art)→*funuun*

(arts)/ *šer* (evil)→*šuruur* (evils)/ *neš* (text)→*nušuuš* (texts)/ *red* (reply)→*ruduud* (replies).

Pattern: CiC→CuCuuC^x

Template: Fi^q→Fu^quu^q

Root: C^ʔ→C^ʔ

Alternation: ١. Internal V mutation (i)→(u) ٢. Infixation of a long V (uu)
٣. Reduplication of the second root C. e.g. *sim* (poison)→*sumuum* (poisons)/ *liš* (thief)→*lušuuš* (thieves).

٢٥. Ef^qal

Ef^qal is a form of irregular pl. All words pluralized in this form are bilateral, and are based on CvC template. The medial V is short, and hence in pl. it is deleted. A new sound is added at the beginning, the first C is put with the second C, which is doubled. Therefore, the template of pl. becomes vCCaC^ʔ, where C^ʔ symbolizes the repetition of the second C in the sing. root.

Pattern: CeC→eCCaC^x

Template: Fe^q→ef^qa^q

Root: C^ʔ→C^ʔ

Alternation: ١. Prefixation of a V (e) ٢. Elision of the internal V (e) ٣. Infixation of a V (a) ٤. Reduplication of the second root C, as in *reb* (god)→*erbab* (gods)/ *ned* (rival)→*endad* (rivals)/ *ten* (ton)→*etnan* (tons).

Pattern: CiC→eCCaC^x

Template: Fi^q→ef^qa^q

Root: C^ʔ→C^ʔ

Alternation: ١. Prefixation of a V (e) ٢. Elision of the internal V (i) ٣. Infixation of a V (a) ٤. Reduplication of the second root C, as in *sin* (tooth)→*esnan* (tooth)/ *sir* (secret)→*esrar* (secrets).

٢٦. Fu^qel

This is a pl. form used in words as; *ʔuzzel* (unarmed ones).

Pattern: CuC^xel

Template: Fu^qel

Root: C^ʔ

Alternation: ١. Mutation

of the first internal V→(u) ٢. Reduplication of the medial root C. The words here suggest incompleteness, lack, or disadvantage; *e^ʔzel* (unarmed)→*ʔuzzel* (unarmed ones)/ *khedeej* (premature baby)→*khuddej* (premature babies)/ *saðej* (naive)→*suððej* (naive ones). Additionally, there are several words only in SA that exemplify a sense of overdoing, i.e., to do something excessively and more than it should be done; *sajid* (prostrator)→*sujjed* (prostrators) and *raki^q* (kneeler)→*rukke^q* (kneelers).

٢٧. Fi^qal

A pattern of irregular pl. as in; *rijal*

Pattern: CeCC→CiCaC

Template: Fe^ql→Fi^qal

Root: C^ʔ

Alternation: ١. Internal V mutation (e)→(i) ٢. Breaking the final CC by infixing a long V (a). Nouns pluralized here may involve animals, masc. and fem.; *kelb* (dog)→*kilab* (dogs)/ *seb^q* (predatory animal)→*siba^q* (predatory animals)/ *jewad* (horse)→*jiyad* (horses)/ *kheruuf* (ram)→*khiraf* (rams)/ *ne^qje* (ewe)→*ni^qaj* (ewes)/ *jerou* (cub)→*jira[?]* (cubs)/ *ferkh* (young bird)→*firakh* (young birds). Weapons, tools;

sehm (arrow)→*siham* (arrows)/ *rumḥ* (spear)→*rimaḥ* (spears)/ *ḥebl* (rope)→*ḥibal* (ropes). Miscellaneous; *rejul* (man)→*rijal* (men)/ *ʿeḏm* (bone)→*ʿiḏam* (bones).

Pattern: CeCeC→CiCaC

Template: Fe^ʿel→Fi^ʿal

Root: Cʿ

Alternation: ١. Mutation of the first internal V (e) →(i) ٢. Lengthening of the second internal V (e)→(a), as in *jebel* (mountain)→*jibal* (mountains)/ *jemel* (camel)→*jimal* (camels). Some are fem.; *qil ʿe* (castle)→*qila ʿ* (castles). There are a few pls. that share a common, regardless of gender, sing. form, or attribution, mainly when they are considered in their pl. form only; *šigar* (little/young ones)/ *kibar* (adult ones)/ *ʿiyal* (family members)/ *riyah* (winds)/ *jiya ʿ* (hungry ones)/ *dimaʿ* (bloods). The word *imreʿe* has two, irregular and completely different, pls.; *nisaʿ* and *niswe* (women).

٢٨. Fu^ʿul

Pattern: CeCeeCe→CuCuC

Template: Fe^ʿeele→Fu^ʿul

Root: Cʿ

Alternation: ١. Internal V mutation (e)→(u) ٢. Shortening of the second internal V (ee)→(u) ٣. Elision of the final V (e) (fem. marker). Examples are *sefeene* (ship)→*sufun* (ships)/ *jezeere* (island)→*juzur* (islands)/ *šeḥeeḥe* (newspaper)→*šuhuf* (newspapers)/ *medeene* (city)→*mudun* (cities). There are also a few mas. nouns pluralized in this pattern, exercising the same alternations: *resuul* (messenger)→*rusul* (messengers).

Pattern: CiCaC→CuCuC

Template: Fe^ʿeele→Fu^ʿul

Root: Cʿ

Alternation: ١. Mutation of the first internal V (i)→(u) ٢. Shortening of the second internal V (a)→(u), as in *šihab* (shooting star)→*šuhub* (shooting stars)/ *kitab* (book)→*kutub* (books)/ *niḏam* (system/regime)→*nuḏum* (systems/regimes).

٢٩. Efa^ʿil

Pattern: eCaCiC

Template: efa^ʿil

Root: Cʿ

Alternation: ١. infixation of a V (a)

٢. Lengthening of the first internal V (e)→(a) ٣. Mutation of the second internal V: (e)→(i). Examples on this pl. are *ejnebee* (foreigner)→*ejanib* (foreigners)/ *qereeb* (relative)→*eqarib* (relatives)/ *erneb* (rabbit)→*eranib* (rabbits).

٣٠. Fu^ʿala

A form of irregular plural in SA that is limited to a few words.

Pattern: CeCCa→CuCaCa

Template: fe^ʿla →fu^ʿala

Root: Cʿ

Alternation: ١. Breaking the medial CC by infixing a long V (a). Nouns related involve attributes; *thekla* (mother bereaved of her child)→*thekala* (mothers bereaved of their children)/ *sikkeer* (drunken)→*sukara* (drunken ones)/ *ḡeyuur* (zealous)→*ḡeyara* (zealous ones)/ *yeteem* (orphan)→*yetama* (orphans). Ideas or attitudes; *fetwa* (formal opinion)→*fetawa* (formal opinions)/ *šekwa* (complaint)→*šekawa* (complaints). Miscellaneous; *nešranee* (Christian)→*nešara* (Christians).

٣١. Afaʿ

Afaʿ is a pl. form for pluralizing mas. bilateral sing. nouns. The two short voiced Vs are replaced by long ones; vCvC → aCaC.

Pattern: eCeC → aCaC

Template: efeʿ → afaʿ

Root: Cʿ

Alternation: ١. Mutation: Lengthening of the internal Vs (e/u) → (a). Nouns here may imply expectations or prospects; *ejel (term) → ajal (terms) / emel (hope) → amal (hopes) / ufūq (horizon) → afaq (horizons)*. Measurement or quantity; *ehed (one) → aḥad (units) / elf (thousand) → alaf (thousands)*. Miscellaneous; *ether (trace) → athar (traces) / elem (pain) → alam (pains) / ithm (sin) → atham (sins)*. The same applies if the noun has a single short V. In addition to the replacement of this single V with a long one, another long V will be inserted between the two Cs; vCC → aCaC. For words which are trilateral, or which are CvCC in root, the medial C is elided, and the root will be vCvC; *biʿr (well) → abar (wells)*.

٣٢. Fuʿat

Fuʿat is a pl. form used to pluralize bilateral or trilateral mas nouns. The (-at) suffix added in pl. here is not that of sound fem. pl., as in *qarre (continent) → qarrat (continents)*, because in these words the form of the word is not changed, while in this pl. form, the form of the word undergoes changing. All the nouns here denote a profession or position.

Pattern: CaCee → CuCat

Template: Faʿee → Fuʿat

Root: Cʿ → Cʿ

Alternation: ١. Shortening of internal V (a) → (u) ٢. Elision of final V (ee) ٣. Suffixation of (-at). This pl. is found in nouns denote positions; *qadʿee (judge) → quḍat (judges) / walee (governor) → wulat (governors) / ramee (shooter) → rumat (shooters) / saʿee (courier) → suʿat (couriers) / ḡazee (raider) → ḡuzat (raiders) / banee (builder) → bunat (builders)*. In unmarked mas nouns, the final fem. suffix (-e) is elided in pl., along with the third root C (y); *tagiye (tyrant) → tuḡat (tyrants) / daʿiye (caller) → duʿat (callers) / dahiye (artful) → duhat (artful ones) / rawiye (relator/narrator) → ruwat (relators/narrators)*.

٣٣. Feʿla

Feʿla is a pl. form used to pluralize bilateral or trilateral mas. nouns. Nouns pluralized through this pattern often have some features in common. Firstly, they are all based on CeCeeC in sing., except for *eseer (captive)* and *ehmeq (fool)*, and they become CeCCa in pl. Secondly, they usually denote physical or bodily qualities or disadvantages, especially those related to bodily injury or accidents;

Pattern: CeCeeC → CeCCa

Template: Feʿeel → Feʿla

Root: Rʿ

Alternation: ١. Elision of the second V (ee) ٢. Suffixation of (-a), as in the nouns *qeteel (murdered) → qetla (murdered ones) / jereeḥ (wounded) → jerḥa (wounded ones) / meredʿ (sick) → merdʿa (sick ones) / šereeʿ (fallen) → šerʿa (fallen ones) / ḡereeq (drowned) → ḡerqa (drowned ones) / eseer (captive) → esra (captives)*. The only exception to the above pattern is the word *meiyit (dead)*. Though Cʿ in root, CvCvC,

seemingly like the words discussed above, but it is phonotactically different being CeiCit. Yet, this word becomes bilateral in pl.; *mouta* (dead people), as the medial C (y) is elided and a V (ou) is inserted instead.

᳚᳚.Fe[᳚]al

Fe[᳚]al is a pl. form used to pluralize bilateral or trilateral mas and fem. nouns. The nouns related are mostly bilateral. Insertion of an internal V plus a C (w), and the deletion of the final V, if any; *šaḍ* (odd)→*šewaḍ* (odds). In nouns where the second C is a geminate, it is degeminated (it becomes a single C);

Pattern: CaC[᳚]e→CewaC **Template:** Fa[᳚]᳚e→Fewa[᳚] **Root:** C[᳚]→C[᳚]
Alternation: 1. Infixation of a syllable (ew) 2. Degemination of the final geminate
 3. Elision of the final V (e). Examples are *hasse* (sense)→*hewas* (senses)/ *madde* (material)→*mewad* (materials)/ *dabbe* (pack animal)→*dewab* (pack animals)/ *᳚ammee* (layman)→*᳚ewam* (laymen). If the noun is C[᳚], which is quite rare, the final C as well as the following Vs are elided, in order to correspond to the pl. pattern; CaC[᳚]iCe → CewaC as in *khaśśiye* (characteristic)→*khewaś* (characteristics).

᳚᳚.Ef[᳚]a?

This is a pl. form used in pluralizing a few sing. nouns, most of which are bilateral. The very name of this pl. form indicates its morphological form (eCCa?) for unilateral nouns (consisting of a single C plus one or two Vs) and eCCa? for bilateral nouns. The change includes the addition of the syllable (a?) to the end of the sing. root, and the V (e) at the beginning of that noun. If the internal V is (ei), it is altered to C (y) in pl.; *᳚ei?* (thing)→*e᳚ya?* (things).

Pattern: Cei→eCya? **Template:** Fei→efya? **Root:** C[᳚]→C[᳚]
Alternation: 1. Prefixation of a V (e) 2. Mutation of the V to C (ei)→(ya)
 3. Suffixation of (a?). Examples are *zei* (fashion)→*ezya?* (fashions)/ *hei* (living)→*e᳚ya?* (the living). If the internal V is (ou), it is deleted and replaced with the C (w). Here, C[᳚] roots (single C words) become bilateral, as in; vC→aCa? *eb* (father)→*aba?* (fathers), or trilateral by changing the V (ou) to a C (w), as in; *jou* (atmosphere/ mood)→*ejwa?* (atmospheres/mood) where it is Cv → vCCvC. C[᳚] roots become C[᳚], too; *᳚ou?* (light)→*e᳚wa?* (lights), hence CvC→vCCvC. CvC→vCCvC *nou?* (rain)→*enwa?* (rains).

Pattern: CeCee→eCCa? **Template:** Fe[᳚]ee→ef[᳚]a? **Alternation:** 1. Prefixation of a V (e) 2. Mutation of the final V (ee) →(?) 3. Suffixation of (?), as in *me[᳚]ee* (intestine)→*em[᳚]a?* (intestines)/ *re[᳚]ee* (opinion)→*ara?* (opinions).

Pattern: CeCuu→eCCa? **Template:** Fe[᳚]ee→ef[᳚]a? **Root:** C[᳚]→C[᳚]
Alternation: 1. Prefixation of a V (e) 2. Mutation of the final V (ee)→(?) 3. Suffixation of a C (?), as in *ne᳚uu* (direction)→*en᳚a?* (directions)/ *᳚iluu* (dismembered part)→*e᳚la?* (dismembered parts).

Pattern: CeCa→eCCa?

Template: Fe^ʕa→ef^ʕa?

Root: Cʔ→Cʔ

Alternation: ١. Prefixation of a V (e) ٢. Elision of the internal V (e) ٣. Suffixation of a C (?), as in *hewa* (affection/inclination)→*ehwa?* (affections/inclinations)/ *śeda* (echo)→*eśda?* (echoes)/ *reja* (area)→*erja?* (areas)/ *ibn* (son)→*ebna?* (sons).

٣٦. Muftē^ʕile

The formation of pl. involves the addition of the V (e) to the end of the sing. noun;

Pattern: MuCteCiC→MuCteCiC

Template: Muftē^ʕil→Muftē^ʕile

Root: C^o

Alternation: ١. Suffixation of a V (e), as in *mu^ʕtezil* (*Mu'tazilid*)→*mu^ʕtezile* (*Mu'tazilids*)/ *murteziq* (mercenary)→*murteziqe* (mercenaries).

٣٧. Fi^ʕye

This is a pattern of irregular plural with the alteration of the final V to a C (y) plus a short V (e); CeCee→CiCye, as in *śebee* (boy)→*śibye* (boys). CeCa→CiCye, as in *feta* (youngman)→*fitye* (youngmen).

٣٨. Fe^ʕale

A very rare form for irregular pl. It involves V mutation: CeCaCee→CeCaCe, as in; *śehabee* (companion)→*śehabe* (companions) and *ħejer* (stone)→*ħijare* (stones).

٣٩. Fa^ʕʕe

A very rare form of irregular pl. that involves a reduplication of the final C and the addition of a short V (e); *mar* (passer-by)→*marre* (passers-by).

٤٠. Fu^ʕwe

A rare form of irregular pl. There are two words in SA that demonstrate such pl.; *ekh* (brother)→*ukhwe* (brothers) and *imreʔe* (woman)→*niswe* (women).

٤١. Fu^ʕwan

A rarely used form of irregular pl. in SA that is characterized by the suffix **-an**. The word *ekh* (brother)→*ukhwan* (brothers) is the only example of such form.

٤٢. Fe^ʕaleeye

A rare irregular pl. form in which the final long V is changed into two short Vs; CvCvCv→CeCaCiye, as in *ħeramee* (robber)→*ħerameeye* (robbers)/ *la adree* (agnostic)→*la adreeye* (agnostics).

٤٣. Fu^ʕl

A rare form of irregular pl. in SA, that is based on CvCC. The related words suggest physical disadvantageness, as in; *eśem* (deaf)→*śum* (deaf ones) and *ebkem* (dumb)→*bukm* (dumb ones), or colours in general; *khudr* (green ones)/ *ħumr* (red ones)/ *śufr* (yellow ones) and *zurq* (blue ones).

٦. Results and Conclusions

١. The paper finds that irregular pl. forms in SA are such multiple that each form has its own structure. While some pls. are predictable, others are not. Unlike the previous studies, this research finds that there are ٤٣ forms of irregular pl. in SA, which is higher than the pl. forms given in the previous studies. According to Murtonen (١٩٦٤), and Wright (١٩٧١:١٩١-٢٣٣), there are ٣١ types of irregular pl. However, in later investigations, such as that of Levy (١٩٧١) and McCarthy and Prince (١٩٩٠), irregular pl. forms are categorized into fewer classes. Predicting the sort of irregular pl. for a single word is quite difficult. The research finds that some irregular pls. are predictable, while some others are not. Nevertheless, there are a few aspects and factors that can help predict which pl. form applies to a single word such the template (the so-called *تفعيلة*, as in *الخ...فعل، فاعل*), the pattern (C-V sequence), and the root (C٢, C٣, C٤, .etc). Also, the spacio-temporal scope of the word may be helpful sometimes in determining the proper irregular pl. form. Hence, for example, quadrilateral words denoting place, setting, or position, especially those prefixed with *m-*, are pluralized through infixation, as in *mesjid→mesajid, mekteb→mekatib, mejlis→mejalis,..etc.*

٢. It has been found that Vs and V quality are significant factors in the formation of irregular pl. as seen in certain pl. forms with internal change only. Thus, a V change from short to long or vice versa may determine the type of such pls.

٣. The paper has found that the root of the word (Cs) is sometimes used in pl. Such root represents the origin of all the related derivations and words. e.g. *wezeer* “minister”, the root *w-z-r*, rather than the sing. form, is used in pl., hence *wizra?* “ministers”. Similarly, in words such as *qeteel, jeree, eseer*, the roots, rather than the sing. words, are pluralized; *qetla*=murdered ones (*qetl*=murdering), *jerħa* wounded ones (*jerħ*=wounding), and *esra*=captives (*esr*=captivity).

٤. The paper has found that there is a relationship between the type of the word and the animate vs. non-animate, human vs. non-human status, which also determines the sort of the irregular pl. For example, trilateral masc words of the template *fe ʔeel* denoting positions, ranks, or posts related to animate or human features are pluralized with *-aʔ* as in *sefeer→suferaʔ* “ambassadors”, *khebeer→khuberaʔ* “experts”, *wekeel→wikelaʔ* “agents”, whereas trilateral masc. words of the same template denoting non-animate, non-human entities, are pluralized with *-an* as in *gemees→qumsan* “shirts”, *qedeeb→quḍban* “shafts”, and *kheleej→khuljan* “gulfs”. Also, the gender of the word governs sometimes the irregular pl. of that word. For example, trilateral masc. nouns that are pluralized with the fem suffix *-e*, have the medial C elided in order not to be assimilated or confused with the sing. fem form of these words; *qaʔid* “leader”→*qade* “leaders” rather than *qaʔide* “female leader” and *baʔiʔ* “salesman”→*ba ʔe* “salesmen” rather than *baʔi ʔe* “saleswoman.” Likewise, *saq (leg)*, and the similarly formed nouns, is pluralized as *seeqan* (legs) by the *a→ee* shift plus the suffix *-an*, rather than *saqan*. This might be to avoid assimilating such plural with the dual form of the word *saq (leg)→saqan (two legs)*.

٥. Short Vs are found to be the weak area of alteration and change in irregular pls., considering the significant changes that involve this type of Vs. Moreover, in the majority, if not all, irregular pl., Vs could be elided, inserted, or replaced, while Cs are altered or re-inserted, with an exception to a few or handful of words whereby the final C is elided in pl. e.g. *seferjel* and *ʔenkebuut*.

٦. The *-an/en* suffix used in certain irregular pls. (such as *buldan*, *ukhwan*, *fityan*, *seeqan*, and a few others) may indicate that the original regular masc. pl. in SA, which is denoted by *-een/-uun*, is related to this suffix, or it could have been derived from it in a way or another. Additionally, in pls. where the change is a suffix, most suffixes are vC, as in *-aʔ*, *-an*, and *-at*.

٧. Further Areas of Research

١. A contrastive study can be conducted on morphophonemic changes in both English language and Arabic language.

٢. There are several morphophonemic changes in Standard Arabic that need a further analysis and investigation including diminutives, tense marking, derivation, and the like. Additionally, Morphophonemic changes in English can be investigated with a reference to the EFL learners' use or recognition.

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