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Articles

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THE APPEARANCE OF GLIDES IN CLASSICAL ARABIC  
DEFECTIVE VERBS

1. INTRODUCTION<sup>1</sup>

In Classical Arabic, so-called weak verbs subdivide into two categories: deaf verbs with identical C<sub>2</sub> and C<sub>3</sub> (e.g. *madad* "to extend") and those showing a glide in either C<sub>1</sub>, C<sub>2</sub> or C<sub>3</sub>. It has been shown in Chekayri & Scheer (1996) that the distribution of [y] and [w] is predictable in the latter class. That is, the glide appearing in some forms of a given verb is the output of a derivation originating in a vowel, that is V<sub>2</sub> for defective (glide in C<sub>3</sub>) and hollow (glide in C<sub>2</sub>), V<sub>1</sub> for assimilated (glide in C<sub>1</sub>) verbs.<sup>2</sup> The nature of this derivation is apophonic in the sense of Guerssel & Lowenstamm (1996). According to this view, weak verbs are underlying biliterals that resort to apophonic glide-creation iff a situation arises where a consonant is needed in order to fill in a vacant position of the template.

Chekayri & Scheer (1996) predict which glide will appear in which verb. In the present paper, we investigate the circumstances under which this glide surfaces throughout conjugation. Its presence vs. absence is considered to be unpredictable in traditional work

<sup>1</sup> We would like to express our gratitude to Georges Bohas, Philippe Ségéral and an anonymous reviewer for making us aware of certain impairments in earlier versions of this text.

<sup>2</sup> We use the term "defective verb" in the sense of "verb with a glide in C<sub>3</sub>", not, as sometimes practised, referring to "verbs with a glide in either C<sub>1</sub>, C<sub>2</sub> or C<sub>3</sub>". Verbs with two glides, i.e. so-called *lafif mafriuuq* (glide in C<sub>1</sub> and C<sub>3</sub>) and *lafif maqrnun* (glide in C<sub>2</sub> and C<sub>3</sub>) are not addressed in this article. These as well as hollow verbs (glide in C<sub>2</sub>) are discussed in forthcoming work (Chekayri & Scheer forth).

such as, among others, Siibawayhi (1988) and Fleisch (1979). In these sources, the reader is simply given an amorphous list of glide-triggering and glide-preventing contexts that are not claimed to share any property. We intend to show that 1) the appearance of the glide throughout conjugation of defective verbs IS predictable, 2) its prediction can only be achieved when assuming Chekayri & Scheer (1996) and 3) the same insertion-strategy Classical Arabic recurs to elsewhere in the grammar is at work here. That is, a glide is apophonically created if a phonologically "illegal"<sup>3</sup> situation arises.

We start in section 2 by recalling the relevant parts of Chekayri & Scheer (1996). Sections 3 and 4 present the excessively complex system woven by the conjugation of defective verbs, stating relevant surface generalisations and putting forth an analysis thereof. Finally, it is shown in sections 5 and 6 that two misbehaving personal forms in fact reveal the more general opposition of derived vs. underived verbs.

2. APOPHONIC ORIGIN OF GLIDES

The distribution of glides in defective verbs is as follows:<sup>4</sup>

(1)

V <sub>2</sub>	number of verbs with		example		
	w	y	pf	ipf	
A	230		danawa	ya-dnuwu	"to be close"
		118	ramaya	ya-rmiyu	"to throw"
I	—	132	Sadiya	ya-Sdayu	"to be very thirsty"
U	13	—	saruwa	ya-sruwu	"to be distinguished"
	total: 493				

Since verbs with V<sub>2</sub> = [a] admit both [y] and [w] in numerically significant proportions, it does not seem possible to predict the glide from the second vowel of the stem. However, the situation becomes clearer when observing that the distribution of the glide for V<sub>2</sub> = [a] is exactly parallel to that of V<sub>2</sub>, not in perfective, but in imperfective forms. Indeed, for verbs with pf V<sub>2</sub> = [a], all and only those that exhibit a [y] show an [i] in imperfective V<sub>2</sub>, and all and only the verbs whose glide is [w] present [u] in imperfective V<sub>2</sub>. Hence, the glide is predictable for all defective verbs on the basis of the imperfective value of V<sub>2</sub>.

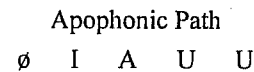
Distributionally, the glide thus obeys the same regularity as the derivation of the imperfective V<sub>2</sub> from its perfective input. If there is a way to understand the latter, the former falls out naturally. Guerssel & Lowenstamm (1996) argue that the apophonic

<sup>3</sup> This word is shorthand here. The reality we refer to will be introduced in section 3.

<sup>4</sup> In this article, "pf" refers to perfective, "ipf" to imperfective forms.

system of Classical Arabic is driven by a very simple derivational mechanism which may be represented as under (2).

(2)

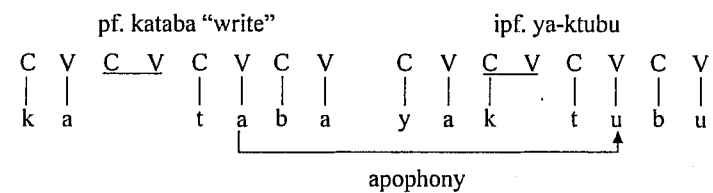


In their view, imperfective V<sub>2</sub> is derived from the perfective base-form by moving one step on the Apophonic Path. Hence, for *labisa*, *kataba*, *kabura*, "to wear", "to write", "to become great", the imperfective forms *ya-lbasu*, *ya-ktubu* and *ya-kburu* are straightforward. For the *Daraba* "to beat" class, V<sub>2</sub> is assumed to be underlyingly zero, so that the apophonic derivation yields [i], i.e. *ya-Dribu*.<sup>5</sup>

If ipf V<sub>2</sub> is the result of an apophonic derivation on pf V<sub>2</sub>, it follows that the glide in defective verbs has the same origin and is derived by the same apophonic means. One consequence of this insight is that weak verbs must be biliterals: if the glide is created through apophony in the course of a derivation, it must be absent from the lexicon. In this case, the question arises why glides are created. Chekayri & Scheer (1996) have examined assimilated verbs (glide in C<sub>1</sub>) with respect to this issue (see also Chekayri 1999).

When deriving imperfective forms of this class of verbs, the glide, which appears in the perfective, is always absent.<sup>6</sup> If, following Guerssel & Lowenstamm (forth), the existence of a derivational syllable is assumed, this fact is a natural consequence of the Template Satisfaction Principle (e.g. McCarthy 1979). The derivational syllable is underscored in the following figures. It may be accessed in derived forms if a derivation has produced segmental material that otherwise could not be accommodated. Consider first the derivation of a sound verb like *kataba* → *ya-ktubu*.

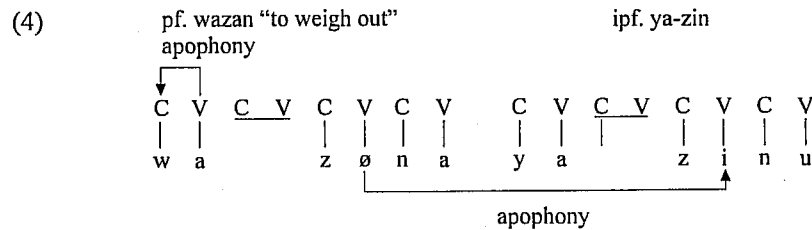
(3)



In perfective forms, the lexicon provides three consonants, which face three consonantal positions that are ready for identification. In imperfective forms on the other hand, four consonants seek association, that is three provided by the lexicon and the prefixal [y]. In this case, the derivational syllable is accessed in order to host all four consonants. Now consider the situation of assimilated verbs as under (4).

<sup>5</sup> See Guerssel & Lowenstamm (1996) for more discussion, which we cannot reproduce here. For full argumentation regarding apophonic glide-creation, see Chekayri & Scheer (1996).

<sup>6</sup> This holds true for verbs with V<sub>2</sub> = [a] only. More detailed data and discussion are provided in section 6.3.



This time, the lexicon provides only two consonants, zn, which face three skeletal positions in perfective forms. In order to meet the Template Satisfaction Principle, a third consonant, [w], is created by way of apophony. In imperfective forms on the other hand, three consonants (zn plus the prefixal [y]) are opposed to three consonantal positions. Since this derivation does not produce a number of consonants that exceeds the basic template, there is no need for the derivational syllable to be accessed.

### 3. UNATTESTED CLUSTERS

The case of assimilated verbs discussed shows how a situation that phonotactics do not allow for is amended by apophonic glide-creation. The basic claim of this paper states that the presence of glides in defective verbs depends on the segmental sequences that are produced by morphology: if clusters arise that are unattested in the language, a phonological process is triggered. Namely, the following sequences do not occur: (5a-d) are not found in Classical Arabic at all, (5e,f) do not exist in its verbal system.<sup>7</sup>

- (5) a. any hiatus  
 b. super long vowels \*iii, \*uuu, \*aaa  
 c. \*uwC, \*iyC  
 d. \*uy, \*iw  
 e. \*Vyu, \*Vyi, \*Vyuu, \*Vyii  
 f. \*Vwu, \*Vwi, \*Vwuu, \*Vwii

<sup>7</sup> Some nominal forms instantiate a subset of the patterns in (5e,f). Namely, [awi] is found for example in *rawiyya*. However, as will be evident from table, morphology does not produce /...a-i.../ sequences, and their behaviour thus cannot be tested. In any event, the existence of the particular sequence [awi] does not harm any generalisation that is involved in the argumentation developed. The same holds true for [ayi], which is instantiated by hollow verbs of the *i-a* class such as *xayifa*. The sequence [awii] is found in hollow adjectives such as *Tawii* "tall". Morphology produces /...a-ii.../ at the intersection of defective verbs and their personal endings, but only in cases where the result betrays predictions anyway, cf. the second but last line of table. The sequence [uyuu] exists in plural forms of hollow nouns such as sg *sayf*, pl *suyuu*. This, however, does not harm the generalisations at hand because apophonic glide-creation yields \*[uwuu] in case the morphological output is /...u-uu.../. Finally, the hapax *Tawul* "be tall" instantiating [awu] is to be mentioned.

It is consistent to assume that there is a reason why these sequences do not occur. Unfortunately, we are not aware of this reason. But in case such configurations are produced by morphology, it is natural to view processes that occur in precisely these environments as a way of amending unobserved patterns. We will show below that all processes observed in the conjugation of defective verbs fall under the scope of this mechanism.

However, let us be explicit on the status of (5). We are *not* saying that the observations given there are due to a constraint. Such a move would introduce an unfashionable explanatory ambition, falling prey to the confusion of observation and explanation. The explanation of the facts stated in (5) must be sought elsewhere in the grammar of Classical Arabic, they are everything but random. Labelling them "constraint" would be a way to assert that we know about the explanation we ignore: these sequences would be said not to exist because of the existence of the constraint. Their non-random nature would be missed: if they were the reverse, the constraint would simply state the opposite.<sup>8</sup>

In the next section, we introduce exhaustive data concerning the conjugation of defective verbs.

### 4. CONJUGATION OF DEFECTIVE VERBS

#### 4.1. Data and general functioning

Classical Arabic distinguishes 13 personal forms (5 singular, 5 plural, 3 dual), two aspectual values (perfective and imperfective), as well as active and passive voice, for a total of  $13 \cdot 2 = 26$  verbal forms a sound verb may be conjugated with in measure I. However, in order to exhaust the environment under focus for defective verbs, i.e. C<sub>3</sub>, vocalic alternations in V<sub>2</sub> must be taken into account as well. As was mentioned earlier, verbs may belong to four apophonic classes: pf [a] – ipf [u] *kataba*, pf [a] – ipf [i] *Daraba*, pf [i] – ipf [a] *labisa*, pf [u] – ipf [u] *kabura*. In addition, there is a fifth class of verbs showing a guttural in C<sub>2</sub> or C<sub>3</sub> that notoriously inhibits apophony to the effect that no vocalic alternation obtains, e.g. pf *daHaSa* – ipf *ya-dHaSu* "torture".<sup>9</sup> Taking into account the fact that verbs of the *kabura* class do not possess passive forms (13 perfective and 13 imperfective, i.e. 26)<sup>10</sup>, the total of verbal forms to be considered is thus  $525 = 260$  minus 26, that is 234. Finally, imperatives add 5 personal forms per verb (2 singular, 2 plural, one dual), i.e.  $5 \cdot 5 = 25$  forms to be added to the 234, for a total of 259 verbal forms that constitute the empirical basis of our investigation.<sup>11</sup>

<sup>8</sup> See Scheer (1999a, b), Carvalho (1998) for more discussion of the inherent circularity of constraints.

<sup>9</sup> See for example Brockelmann (1908–13: 194ff), Kurylowicz (1958: 13ff).

<sup>10</sup> Verbs expressing a quality or a state of affairs of the pf [u] – ipf [u] class (*saruwa*) lack passive forms for obvious semantic reasons. Cf. ibn al-Hajib (1982), ibn ya'qub (1973), siibawayhi (1988) for discussion.

<sup>11</sup> The numerical situation with regard to defective verbs in Classical Arabic according to apophonic classes is as follows (from juuziif ilyaas & jirjis naaSiif 1995): pf [a] – ipf [i] 162, pf [a] – ipf [u] 279, pf [a] – ipf [a] 50, pf [i] – [a] 157, pf [u] – ipf [u] 17, i.e. a total of 665 verbs.



3 m	-u	yu-dnaa	yu-rmaa	-	yu-nhaa	yu-rDaa
3 f	-u	tu-dnaa	tu-rmaa	-	tu-nhaa	tu-rDaa
du 2	-aani	tu-dnayaani	tu-rmayaani	-	tu-nhayaani	tu-rDayaani
3 m	-aani	yu-dnayaani	yu-rmayaani	-	yu-nhayaani	yu-rDayaani
3 f	-aani	tu-dnayaani	tu-rmayaani	-	tu-nhayaani	tu-rDayaani
pl 1	-u	nu-dnaa	nu-rmaa	-	nu-nhaa	nu-rDaa
2 m	-uuna	tu-dnawna	tu-rmawna	-	tu-nhawna	tu-rDawna
2 f	-na	tu-dnayna	tu-rmayna	-	tu-nhayna	tu-rDayna
3 m	-uuna	yu-dnawna	yu-rmawna	-	yu-nhawna	yu-rDawna
3 f	-na	yu-dnayna	yu-rmayna	-	yu-nhayna	yu-rDayna

**Imperative**

V<sub>1</sub> = ∅, V<sub>2</sub> = apophonic on V<sub>2</sub> pf, Active

	pers. suffix	dnu=a-u	rmi=∅-i	sru=u-u	nha=a-a	rDa=i-a
sg 1	?u-nSur-∅	?u-dnu	?i-rmi	?u-sru	?i-nha	?i-rDa
2 m	-ii	?u-dnii	?i-rmii	?i-srii	?i-nhay	?i-rDay
2 f	-aa	?u-dnuwaa	?i-rmiyaa	?u-sruwaa	?i-nhayaa	?i-rDayaa
3 m	-uu	?u-dnuu	?i-rmuu	?u-sruu	?i-nhaw	?i-rDav
3 f	-na	?u-dnuuna	?i-rmiina	?u-sruuna	?i-nhayna	?i-rDayna

Grey-shaded cells show a glide of apophonic origin, while the glide in boxed forms is a manifestation of the suffix. This bipartition will be motivated below.

If defective verbs are biliterals lacking C<sub>3</sub>, its stem is vowel-final underlyingly, that is closed by V<sub>2</sub>, which is always short: /dana-, rama-, saru-, naha-, raDi-l. Suffixation of personal endings thus creates three different constellations: V<sub>2</sub> may precede 1) a consonant, 2) a short vowel or 3) a long vowel (geminate-initial suffixes do not occur).

Let us neglect vowel-length in the first step. We assume that as before, C<sub>3</sub> must be taken care of, that is it seeks to be either identified by a glide or circumscribed by a long vowel. All configurations that meet the Template Satisfaction Principle for C<sub>3</sub> are represented under (8).

- (8) a. C<sub>3</sub> is identified: -V suffix      b. C<sub>3</sub> is identified: -C suffix
- |   |   |
|---|---|
| $C_1 \ V \ \underline{C \ V} \ C_2 \ V_2 \ C_3 \ V$ <div style="display: flex; justify-content: center; gap: 20px;"> <div style="text-align: center;"> <math>\begin{array}{c}   \\ y \\   \\ w \end{array}</math> </div> <div style="text-align: center;"> <math>\begin{array}{c}   \\ y \\   \\ w \end{array}</math> </div> </div> | $C_1 \ V \ \underline{C \ V} \ C_2 \ V_2 \ C_3 \ V - C \ V$ <div style="display: flex; justify-content: center; gap: 20px;"> <div style="text-align: center;"> <math>\begin{array}{c}   \\ y \\   \\ w \end{array}</math> </div> <div style="text-align: center;"> <math>\begin{array}{c}   \\ C \end{array}</math> </div> </div>   |
| <p>c. C<sub>3</sub> is circumscribed: -V suffix</p> $C_1 \ V \ \underline{C \ V} \ C_2 \ V_2 \ C_3 \ V$   | <p>d. C<sub>3</sub> is circumscribed: -C suffix</p> $C_1 \ V \ \underline{C \ V} \ C_2 \ V_2 \ C_3 \ V - C \ V$ <div style="display: flex; justify-content: center; gap: 20px;"> <div style="text-align: center;"> <math>\begin{array}{c}   \\ C \end{array}</math> </div> <div style="text-align: center;"> <math>\begin{array}{c}   \\ C \end{array}</math> </div> </div> |

In case of consonant-initial suffixes that are provided with their own syllabic structure (cf. sound verbs) as under (8b,d), the natural way to fill in C<sub>3</sub> is through apophonic glide-creation as under (8b). An example thereof is pf act. sg 1 /rama-tul → [ramaytu]. However, depending on the quality of V<sub>2</sub>, glide-creation may produce unobserved sequences such as \*[iyC], cf. pf act. sg 1 /raDi-tul → \*[raDiytu]. In this case, V<sub>2</sub> spreads onto the final Nucleus of the binyan as under (8d), yielding a long vowel [raDiitu].

If the suffix is vowel-initial, the suffixal vowel may or may not be identical with V<sub>2</sub>. In the former case, both are simply concatenated, instantiating (8c). The result is a long vowel as for example in pf act. sg 3m /dana-a/ → [danaa]. If on the other hand V<sub>2</sub> is different from the suffixal vowel, concatenation may not take place since hiatuses do not occur in Classical Arabic. Hence, apophonic glide-creation may rescue the structure in the sense of (8a). This indeed occurs in pf act. sg 3m /saru-a/ → [saruwa]. However, here again, glide-creation may also produce non-occurrent sequences such as \*[yu], cf. ipf act. sg 1 /?a-rmi-ul → \*[?a-rmiyu]. In this case, the only way to meet the Template Satisfaction Principle is to abandon a vowel in order for the other to be able to spread. This is indeed what happens: V<sub>2</sub> spreads onto the position that is normally occupied by the suffixal vowel, which is lost. The result appears as [?a-rmii], which is an instantiation of (8c).

The situation is much the same when suffixes begin with a long vowel. In case V<sub>2</sub> and the suffix-initial long vowel are different, apophonic glide-creation may successfully break up the hiatus as for pf act. du 3m /saru-aal/, which comes out as [saruwaa], following (8a). As before, glide-creation may also yield unobserved structures such as \*[wi(i)] in ipf act. sg 2f /ta-dnu-iinal → \*[ta-dnuwiina]. In these configurations, the long vowel takes on the short V<sub>2</sub>, which is lost. The result is [ta-dniina], illustrating (8c). If V<sub>2</sub> and the suffix-initial long vowel are identical, concatenation would produce a super long vowel. Of course, objects of this kind do not exist. The result is a “simple” long vowel following the configuration under (8c). An example thereof is ipf act. sg 2f /ta-rmi-iinal → [ta-rmiina].

Finally, a special behaviour is encountered for sequences of V<sub>2</sub>= [a] followed by suffixal long [ii,uu]. As before, the loss of V<sub>2</sub> could be expected, yielding an output [C<sub>2</sub>ii] / [C<sub>2</sub>uu]. However, the obtaining results are [C<sub>2</sub>ay] / [C<sub>2</sub>aw], as in ipf act. sg 2f /ta-nha-iinal → [ta-nahayna], pf act. pl 3m /dana-uul → [danaw]. We do not know why these configurations do not follow the general pattern.

Table (9) sums up this discussion. It lists all logically possible combinations of V<sub>2</sub> and personal endings. The reader may verify under (7) that all existing configurations are an instantiation of (8), and that all identical sequences of V<sub>2</sub>+suffix behave alike (“unatt. sequ.” = unattested sequence).

(9)

morphological output	concatenation	glide-creation	spreading	example	underlying	surface	identification
a. $V_2 + C_{suff}$							
a	C	unatt. sequ. ayC		rama + tu	rama	ramaytu	pf act. sg 1
a	C	unatt. sequ. awC		dana + tu	dana	danawtu	pf act. sg 1
i	C	unatt. sequ. *iyC, *iwC	iiC	raDi + tu	raDi	raDiitu	pf act. sg 1
u	C	unatt. sequ. *uyC, *uwC	uuC	saru + tu	saru	saruutu	pf act. sg 1
b. $V_2 + V_{suff}$							
a	a	aa		dana + a	dana	danaa	pf act. sg 3m
u	u	uu		?a-dnu + u	?a-dnu	?u-dnuu	ipf act. sg 1
i	i	ii					
u	a	unatt. sequ. uwa		saru + a	saru	saruwa	pf act. sg 3m
I	a	unatt. sequ. iya		raDi + a	raDi	raDiya	pf act. sg 3m
a	u	unatt. sequ. *ayu, *awu	aa	?a-nha + u	?a-nha	?a-nhaa	imp act. sg 1
i	u	unatt. sequ. *iyu	ii	?a-rmi + a	?a-rmi	?a-rmii	imp act. sg 1
a	I	unatt. sequ. *ayi, *awi	predic.: ayi awi				does not occur
u	i	unatt. sequ. *uwi	predic.: uu <sup>14</sup>				does not occur
c. $V_2 + VV_{suff}$							
u	aa	unatt. sequ. uwaa		saru + aa	saru	saruwaa	pf act. du 3m
I	aa	unatt. sequ. iyaa		raDi + aa	raDi	raDiya	pf act. du 3m
a	aa	unatt. sequ. ayaa, awaa		dana + aa	dana	danawaa	pf act. du 3m
u	ii	unatt. sequ. *uwii	ii	dnu + iina	dnu	ta-dniina	ipf act. sg 2f
i	ii	unatt. sequ. *iyii	ii	rmi + iina	rmi	ta-rmiina	ipf act. sg 2f
u	uu	unatt. sequ. *uwuu	uu	saru + uu	saru	saruuu	pf act. pl 3m
i	uu	unatt. sequ. *iyuu	uu	raDi + uu	raDi	raDuu	pf act. pl 3m
a	ii	unatt. sequ. *ayii, *awii	ay	ta-nha + iina	ta-nha	ta-nhayna	ipf act. sg 2f
a	uu	unatt. sequ. *ayuu, *awuu	aw	dana + uu	dana	danaw	pf act. pl 3m

<sup>14</sup> See ?i<sup>š</sup>maam phenomenon in Arabic grammar “?i<sup>š</sup>maam: a scent or flavour of u-sound.” Cf. Write (1859: 84–85). See also Chekayri & Scheer (forth).

All sequences produced by the morphology are treated along the same hierarchised pathway: 1) concatenation. If the result produces an unattested sequence, 2) apophonic glide-creation is sought. In case the ensuing cluster is still absent from Classical Arabic, 3) (8c) is arrived at by spreading. In this case, lexically present material is lost: either  $V_2$  or the suffixal vowel is truncated. The former takes place when the suffixal vowel is long, the latter in case it is short.

Note that a given structure may fail to be tolerated for different reasons: 1) if  $C_3$  is neither identified nor circumscribed (concatenation of  $V_2$  and consonant-initial suffixes), 2) if a non-occurrent sequence obtains. These are listed under (5).

#### 4.2. Order of strategies

We have seen that the impressively complex conjugation of defective verbs may be accounted for by assuming three different strategies to be performed on morphological output: 1) simple concatenation, 2) apophonic glide-creation, 3) spreading. These three devices crucially apply one after the other much in the way that is familiar from ordered rules or constraints. That is, glides are created only if concatenation has proved unsuccessful, and spreading takes place only if both concatenation and glide-creation produce unattested sequences. Why is this order as it is, rather than the reverse? Unlike rule- and constraint-based approaches that never appeal to independent (“intrinsic”) evidence in order to motivate the ranking of their devices, we should like to suggest a reason for the ordering observed. When looking at the consequences of each strategy, the ranking may be better understood. Indeed, concatenation is segmentally neutral: no material is added, nor is there any lexically present segment lost. Apophonic glide-creation adjoins segmental material to the string that was lexically absent, and spreading finally entails the loss of lexically present segments.

#### 4.3. Glides have two different origins

When going through table (7), most of the glides observed indeed do depend on  $V_2$ , as is predicted by Chekayri & Scheer (1996). Consider the example of pf act. sg 1 given below.

(10)

	pers. suffix	dana = a-u	rama = Ø-i	saru = u-u	naha = a-a	raDi = i-a	
sg	1	labis-tu	danawtu	ramaytu	saruutu	nahaytu	raDiitu

In verbs with ipf  $V_2=[u]$  ( dn=a-u), [w] appears, while verbs showing [i] in  $V_2$  in active imperfective forms ( rm=Ø-i) have [y].

The attentive reader will have noticed, however, the presence of a number of glides whose distribution is in no way connected to  $V_2$ . All cases thereof are given under (11).

(11)

perfective active						
	pers. suffix	dnu = a-u	rmi = Ø-i	sru = u-u	nha = a-a	rDa = i-a
pl 3 m	-uu	danaw	ramaw	saruu	nahaw	raDuu
imperfective active						
sg 2 f	-iina	ta-dniina	ta-rmiina	ta-sriina	ta-nhayna	ta-rDayna
pl 2 m	-uuna	ta-dnuuna	ta-rmuuna	ta-sruuna	ta-nhawna	ta-rDawna
pl 3 m	-uuna	ya-dnuuna	ya-rmuuna	ya-sruuna	ya-nhawna	ya-rDawna
imperfective passive						
sg 2 f	-iina	tu-dnayna	tu-rmayna	-	tu-nhayna	tu-rDayna
pl 2 m	-uuna	tu-dnawna	tu-rmawna	-	tu-nhawna	tu-rDawna
pl 3 m	-uuna	yu-dnawna	yu-rmawna	-	yu-nhawna	yu-rDawna
imperative						
sg 2 f	-ii	?u-dnii	?i-rmii	?i-srii	?i-nhay	?i-rDay
pl 2 m	-uu	?u-dnuu	?u-rmuu	?u-sruu	?i-nhaw	?i-rDaw

Whatever  $V_2$ , the glide is always the same for a given line. Thus, a prediction is made to the effect that these glides may by no means have an apophonic origin.

This prediction is borne out since the glides in question are obviously consonantal manifestations of the suffix. The reader may verify that all and only the personal suffixes beginning with a long high vowel provoke the appearance of non-apophonic glides.<sup>15</sup> The selection of [y] or [w] depends on the suffix-initial vowel. The glides [y] and [w] are the only manifestation of /-ii, -uu/, which possess no vocalic instantiation.

The different origin of glides in the conjugation of defective verbs has been drawn attention to in table (7): the cells of those of apophonic origin are grey-shaded, whereas forms containing glides from long suffix-vowels are boxed.

<sup>15</sup> But pf pass. pl 3m [-uu]. Simple concatenation in this case produces \*[C<sub>1</sub>uC<sub>2</sub>i-uu]. Apophonic glide-creation would have to ensue because hiatuses are unattested in Classical Arabic. However, the result \*[C<sub>1</sub>uC<sub>2</sub>iy-uu] still contains the non-occurrent cluster \*[iyuu], cf. (5e). In all other cases of that kind, the situation is resolved in a way that the long suffix /-uu/ appears as a glide [-w], cf. (11). However in pf pass. pl 3m, this option is not available either because the ensuing sequence \*[C<sub>1</sub>uC<sub>2</sub>iw] contains \*[iw], which does not exist in Classical Arabic, cf. (5d). The solution adopted by the language is to truncate the imperfective /i/: /C<sub>1</sub>uC<sub>2</sub>i-uu/ → [C<sub>1</sub>uC<sub>2</sub>uu].

#### 4.4. Apophonic glide-creation viewed from inside conjugation

Chekayri & Scheer (1996) have established that the distribution of [w] and [y] among weak verbs is a function of  $V_2$ . This result may be controlled when comparing the different verbal forms from inside of the conjugation. Table (12) shows underlying and surface forms of  $V_2$  for every verbal class, as well as the glide that is observed on its righthand side.<sup>16</sup>

	verb	underlying $V_2$	surface $V_2$	Glide	glide derived from
pf act.	dn	A	a	w	pf act. / $V_2$ /
	rm	Ø	a	y	
	sr	?	u	w	
	nh	Ē	a	y	
pf pass.	rD	Ē	i	y	pf pass. / $V_2$ /
	dn	I	i	y	
	rm	I	i	y	
	sr	I	i	y	
ipf act.	nh	I	i	y	ipf act. / $V_2$ /
	rD	I	i	y	
	dn	U	u	w	
	rm	I	i	y	
ipf pass.	sr	U	u	w	ipf pass. / $V_2$ /
	nh	?	a	y	
	rD	A	a	y	
	dn	A	a	y	
ipf pass.	rm	A	a	y	ipf pass. / $V_2$ /
	sr	A	a	y	
	nh	A	a	y	
	rD	A	a	y	

Clearly, the distribution of [w] and [y] is a function of  $V_2$ : if the latter is subject to variation as in active forms, the glide also alternates. If on the other hand  $V_2$  hosts the invariable passive marker [i] (perfective) or [a] (imperfective, i.e. the result of an apophonic derivation on pf [i], cf. (6)) which is common for all verbs, only [y] appears.

It could be argued that the invariable [y] in perfective passive forms is simply a copy of the passive [i]. However, coming across the same invariable [y] in imperfective passive forms where  $V_2$  is [a] would remain mysterious. If on the other hand it is assumed that in both cases, the passive [i] is the derivational basis for apophonic glide-creation (and for the

<sup>16</sup> The underlying identity of  $V_2$  for the nh=a-a class may not be determined in the usual way because the guttural inhibits apophony to the effect that no alternation in imperfective forms occurs. The glide [y], however, points to a lexical  $V_2 = \emptyset$  for this verb, hence it would be of the *Daraba* class.

apophonic derivation of the imperfective passive [a]), the invariable appearance of [y] is regular. Moreover, the following unifying generalisations ensue.

- (13) a. all imperfective forms are derived from their corresponding perfectives.  
b. perfective  $V_2$  is the derivational basis for both imperfective  $V_2$  and glides.

These statements unify the derivational map of sound and weak verbs.

The distributional link between  $V_2$  and glides that has been established on the grounds of interverbal statistics is thus confirmed when looking at verbal inflexion.

#### 4.5. Two different glides in the same verb

Weak verbs are traditionally viewed as possessing a glide in their lexical representation, cf. for instance Siibawayhi (1988), ibn al-Haajib (1995), ibn jinnii (1954), Fleisch (1979), Brame (1970). According to this option, glides are deleted when they do not appear on the surface. For obvious reasons, this approach is unable to distinguish between the two kinds of glides and their contrasting origin in the way that has been demonstrated in section 4.3. This distinction being crucial for the understanding of the semivocalic system of weak verbs, most relevant generalisations, among which those in (13), are missed. One consequence thereof are the amorphous lists of vocalic combinations that do or do not trigger the appearance of glides, which are found in most grammars. See also Angoujard (1984), Bohas (1979, 1985) and Kouloughli (1979) on this issue.

More specifically, let us consider cases where two different glides appear in the conjugation of a single verb. Relevant forms of the verb  $dn = a-u$  appear under

- (14) a. pf act. sg 1      danaw-tu  
          pf act. du 3m    danaw-aa  
      b. pf pass. sg 3m    duniy-a  
      c. ipf pass. pl 3f    yu-dnay-na  
          ipf pass. sg/pl 2f    tu-dnay-na

If glides are underlyingly present, the lexical representation of this verb is  $dnw$ . Then, the [y] in (14b,c) begs the question. In case the odd [y] is adjacent to an [i] as in (14b), assimilation-rules of the kind  $[w/ \rightarrow [y] / i - ]$  are commonly invoked, as by Basran grammarians such as ibn ya'iiš (1973), or Brame (1970).<sup>17</sup> However, there is no way to account for the [y] in (14c) via assimilation because the vocalic environment is [a]. Arab Grammarians therefore resort to assimilation through the perfective passive  $V_2 = [i]$ , which they argue is underlying in imperfective passive forms. This move yields correct

<sup>17</sup> The rule of assimilation shown is advocated by Arabic Grammarians even for verbs that show over [y] in all forms but those where the glide is a manifestation of the suffix.  $rD = i-a$  for instance is viewed as  $rDw$  because the root shows [w] in the nominal *maSdar* form [riDwaan]. See Bohas (1979) on this issue.

surface forms. Our own approach also derives the glide observed in the imperfective passive from perfective passive forms, as shown in (12). Hence, both views enjoy the same empirical adequation with respect to this particular set of data. However, one difference remains: the derivation of ipf pass.  $V_2 = [a]$  from pf pass.  $V_2 = [i]$  is straightforward according to (6) since its character is apophonic. It remains stipulative under the deletion-approach.

## 5. DERIVED VS. UNDERIVED PERFECTIVES

### 5.1. Misbehaving forms

The attentive reader will have noticed that six verbal forms run foul of the general pattern that was exposed so far.

(15)

pf active	pers. suffix	dana=a-u	rama=Ø-I	saru=u-u	naha=a-a	raDi=i-a
sg 3 f	-at	danat	ramat		nahat	
du 3 f	-ataa	danataa	ramataa		nahataa	

Indeed, morphology produces sequences of two adjacent [a], e.g. pf act. 3f /*dána-at*/, that should merge into a long vowel according to (9). However, instead of the expected [danaat, ramaat, nahaat, danaataa, ramaata, nahaataa], these verbal forms surface with short vowels. The special behaviour of these suffixes has been pointed out independently, see e.g. ibn al-anbaarii, abuu bakr (1981).

Distributionally, the misbehaving forms are easily identifiable: short instead of expected long vowels represent all and only the occurrences of the underlying structure  $/...a + aC/$ . In any other case, i.e. when the suffixal [-a] is not followed by a consonant as in, say, pf act. sg 3m /*dana + a*/  $\rightarrow$  [danaa], the result is regularly long.

Hence, two parameters yield exceptional forms: 1) the concatenation of two low vowels (concatenation of two [i]s or [u]s produces regular results) and 2) the presence of a consonant following the suffixal [-a] (simple [-a] shows regular behaviour).

In this section, we would like to investigate this issue. We aim at showing that this irregularity, which seems insignificant at first sight, in fact reveals an important property of Classical Arabic verbs.

### 5.2. Identity of perfective feminine suffixes

The suffixes [-at, -ataa] that have been singled out because of their abnormal behaviour are also special with respect to another property: they are the only Classical Arabic personal endings that begin with a short vowel followed by a consonant.



Consider the structure of perfective singular suffixes: 1 [-tu], 2m [-ta], 2f [-ti], 3m [-a], 3f [-at]. Obviously, these are combinations of the three vowels [i,a,u] and [t]. Any configuration [-tV] is instantiated, and a vowel exists alone [-a]. The only missing combination in order to exhaust all logically possible patterns is [-t] in isolation without a vowel.

We shall take seriously this missing option hereafter and explore the possibility that [-at] has the underlying identity /-t/. Under this hypothesis, [-a-] is filled in by way of epenthesis in order to satisfy the Empty Category Principle (see next section). The case of pf act. du 3f [-ataa] is exactly parallel because it may be deconstructed as [-at-aa], [-aa] being the dual marker common to all perfective dual forms.

If it can be shown that [-at] in fact is /-t/, three problems are overcome. On one hand, the generalisation “there is no personal ending beginning with a short vowel followed by a consonant” is exceptionless. On the other hand, perfective singular suffixes illustrate all and only the logically possible combinations of [t] and the three vowels of the language. Finally, our initial observation regarding an expected long vowel where short [a] surfaces is deprived of its substance. Indeed, if the [a] of [-at(aa)] is the result of epenthesis, a long [aa] is no longer expected since the morphology does not produce /dana-at(aa)/, but /dana-t(aa)/.

### 5.3. Proper Government and empty Nuclei in sound and weak verbs

The figures used in this paper show a number of empty constituents, cf. for instance. The idea that Classical Arabic is a strict CV-language underlyingly is expressed in Guerssel & Lowenstamm (forth). Recent work also evaluates the possibility of extending to other languages this syllabic analysis according to which there are no Codas nor branching constituents.<sup>18</sup> In any event, viewing syllabic structure as a strict sequence of non-branching Onsets and non-branching Nuclei leads to the multiplication of empty constituents, chiefly of empty Nuclei. The phonological Empty Category Principle (Kaye et al. 1990:219), which is parallel to the one familiar from syntax, defines the conditions under which an empty Nucleus may remain phonetically unexpressed. An adapted version thereof appears under (16).

#### (16) Empty Category Principle

An empty Nucleus may remain unexpressed if it is properly governed.

Proper Government (PG) is an asymmetric internuclear relation whereby Nuclei endowed with segmental content may govern adjacent empty Nuclei to their left. This internuclear dependency relation has proved successful in accounting for various vowel-zero alternations in genetically unrelated languages, among which are modern Arabic varieties.<sup>19</sup> Consider the representation (8b), repeated here as (17a) for convenience, where explicit governing relations are added. In (17b), the same situation

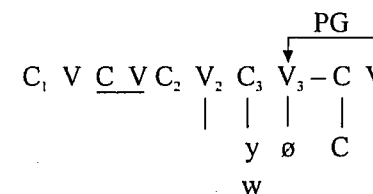
<sup>18</sup> See Bendjaballah (1998), Bonvino (1995), Creissels (1989), Guerssel & Lowenstamm (forth), Heo (1994), Hérault (1989), Larsen (1994, 1998), Lowenstamm (1996, 1999), Nikiema (1989), Scheer (1996, 1997, 1998a, b, 1999a, b), Ségéral (1995, 1996), Ségéral & Scheer (1998).

<sup>19</sup> See e.g. Kaye et al. (1990), Kaye (1990a, b), Charette (1991), Scheer (1996, 1997, 1998a, b) on Proper Government.

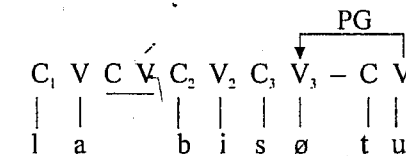
involving a consonant-initial suffix is exemplified for a sound verb, perf act. sg1 [labis-tu].

#### (17)

a. C<sub>3</sub> is identified: C-initial suffix

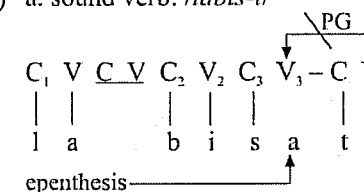


b. sound verb with C-initial suffix

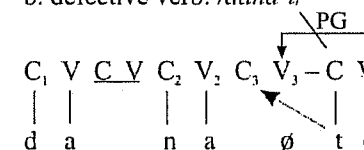


In both cases, the binyan-final V<sub>3</sub> is properly governed by the suffixal vowel, and may thus remain phonetically unexpressed. However, if the personal ending consists solely of a consonant as in the case of our hypothetical pf act. sg/du 3f /-t/, no governor is available for V<sub>3</sub>, which thus must receive phonetic identification. Recall that only contentful Nuclei may govern. Relevant representations of this appear under (18a) for sound, under (18b) for defective verbs.

#### (18) a. sound verb: /labis-t/



#### b. defective verb: /dana-t/



Under (18a), epenthesis ensues in order to satisfy the ECP for V<sub>3</sub>. In (18b), however, epenthesis cannot solve the problem since C<sub>3</sub> would remain an orphan, which would be at variance with the Template Satisfaction Principle. Apophonic glide-creation would not help either because V<sub>3</sub> would still not be governed. In this case, the lexically unassociated suffixal /-t/ identifies C<sub>3</sub>, and the resulting form is thus [danat]. Both the ECP and the Template Satisfaction Principle are respected.<sup>20</sup>

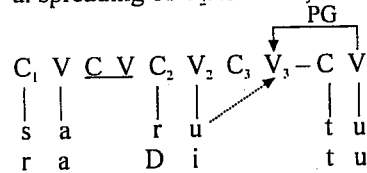
### 5.4. Licensing of long vowels

Classical Arabic could resort to yet another strategy in order to rescue the morphological output /dana-t(aa)/ (18b). That is, V<sub>2</sub> could spread onto V<sub>3</sub> as in the pf act sg1 /saru-tu, raDi-tu/ → [saruuu, raDiitu] where apophonic glide-creation is prohibited (\*[uwC, iyC]), thereby circumscribing C<sub>3</sub> as shown in (8d). Consider this option for both cases mentioned under (19a), as opposed to /dana-t/ under (19b).

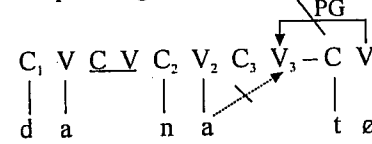
<sup>20</sup> See Kaye (1990a) on the status of licensed final empty Nuclei, which may remain phonetically unexpressed even when escaping Proper Government.

(19)

a. spreading of V<sub>2</sub>: /saru-tu, raDi-tu/



b. spreading of V<sub>2</sub>: /dana-t/



As before, V<sub>3</sub> escapes Proper Government in (19b), but not in (19a). We believe that this is the reason why V<sub>2</sub> may spread in the former, but not in the latter configuration. Classical Arabic indeed admits final long vowels (cf. note 20), but does not tolerate long vowels followed by two consonants in verbal forms: \*VVCCV.<sup>21</sup>

Hollow verbs illustrate this contextual restriction on the existence of long vowels. Long V<sub>2</sub> occurs when the personal suffix is vowel-initial, whereas short V<sub>2</sub> appears in case the ending is consonant-initial.<sup>22</sup>

(20)	ql=a-u "say"	sr=ø-i	Tl=u-u	
a.	+ V...			
	?a-quul-u	?a-siir-u	?a-Tuul-u	imp act. sg1
	ta-quul-iina	ta-siir-iina	ta-Tuul-iina	imp act. sg2f
	ta-quul-aani	ta-siir-aani	ta-Tuul-aani	imp act. du2,3f
	ta-quul-uuna	ta-siir-uuna	ta-Tuul-uuna	imp act. pl2m
	quul-ii			imperative sg2f
b.	+ CV			
	ta-qul-na	ta-sir-na	ta-Tul-na	imp act. pl2f
	ya-qul-na	ya-sir-na	ya-Tul-na	imp act. pl3f
c.	+ ø			
	qul			imperative sg2m

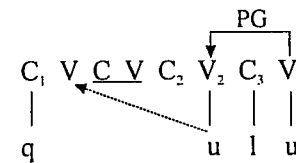
Representations of the first of these appear under (21).

<sup>21</sup> This generalization is challenged by a few lexical items only. To give an idea of the numeric proportions involved, we have examined the data contained in the *Dictionary of Modern Written Arabic* by Hans Wehr (1961). Namely, in deaf roots, a long vowel is awaited, which should occur before the geminated second root consonant in measure III and VI forms. However, out of 270 deaf roots, CVVCCV-clusters are derived only by ten roots in measure III forms (i.e. 3.70%, e.g. *qaaSSa* "to retaliate"), by nine roots in measure VI forms (i.e. 3.33%, e.g. *taDaamma* "to unite"), and by five roots in both measure III and measure VI forms (i.e. 1.85%, e.g. *maassa* "to be in touch with", *tamaassa* "to touch each other"). This numeric situation clearly shows that the Grammar of Classical Arabic acts against this kind of cluster.

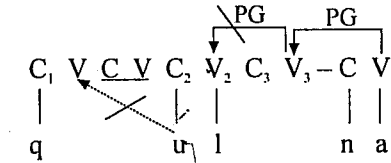
<sup>22</sup> See Taki (1995) on this issue.

(21)

a. spreading possible: V<sub>2</sub> governed



b. spreading impossible: V<sub>2</sub> ungoverned



Prohibition of long vowels before consonant clusters is by no means a special feature of Classical Arabic. For instance, the same phenomenon occurs in Italian (Larsen 1998). It is correctly encoded by the generalisation stating that spreading of long vowels may occur only if its second part is licensed by Proper Government.<sup>23</sup>

Returning to /dana-t(aa)/ as under (19b), the reason why [a] cannot spread is the same as the one preventing [u] from expanding in imp act. pl 2f [ta-qul-na]: its rightmost part fails to be properly governed.

### 5.5. Derived vs. simple perfectives

According to the analysis developed so far, the question arises why epenthesis occurs in verbs with V<sub>2</sub> = [u,i] ( sr = u-u and rD = i-a), but not in those with V<sub>2</sub> = [a] ( dn = a-u, rm = ø-i and nh = a-a). Consider the relevant forms under (22).

(22)	pf act.	pers. suffix	dana=a-u	rama=ø-i	saru=u-u	naha=a-a	raDi=i-a
	sg 3 f	/-t/	danat	ramat	saruwat	nahat	raDiyat
	du 3 f	/-t-aa/	danataa	ramataa	saruwatta	nahataa	raDiyataa

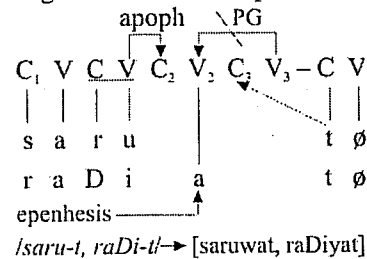
While verbs with V<sub>2</sub> = [a] host the suffix /-t/ in C<sub>3</sub> for the reasons mentioned, verbs with V<sub>2</sub> other than [a] develop both an apophonic glide and epenthesis. Why do we not have \*[sarut(aa)] and \*[raDit(aa)]?

We believe that [danat(aa)] on the one hand, as opposed to [saruwat(aa)] and [raDiyat(aa)] on the other is correctly represented as (23b).

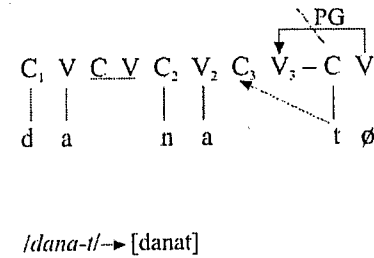
<sup>23</sup> See Scheer (1998b: 279; 2000: 178f, 191f) on the relationship of internuclear government and internuclear licensing.

(23)

a. glide-creation and epenthesis



b. concatenation



Both patterns contrast with respect to the identification of the derivational syllable  $C V$ . Verbs with  $V_2$  other than [a], but not those with  $V_2 = [a]$ , access this CV-unit. Recall that the function of the derivational syllable is to host additional segmental material that is produced by a derivational operation. Hence, the view diagrammed in (23) implies that  $sr = u-u$  and  $rD = i-a$  are derived forms, while no operation of a derivational nature has been performed on  $dn = a-u$ ,  $rm = \emptyset-i$  and  $nh = a-a$ . We adduce independent evidence in favour of this contrast in the next section.

Before doing so, let us consider the phonological processes at hand in (23). Since the derivational syllable is ready to be accessed for  $sr = u-u$  and  $rD = i-a$ , the second root consonant of these verbs pertains to the derivational C, while the second root-vowel belongs to the derivational V. Hence, the two last CV sequences of the binyan seek segmental identification. As before, the suffixal /-t/ enters the binyan and attaches to  $C_3$ . Recall that  $V_3$  is final and licensed in virtue of this, cf. note 20. The remaining  $C_2$  and  $V_2$  are filled in by way of apophonic glide creation and epenthesis, respectively. Note that  $V_2$  needs to be segmentally expressed since it is not subject to Proper Government.<sup>24</sup>

No such operations are requested for verbs of the [a]-type because the second root-consonant and the second root-vowel do not belong to the derivational syllable, but pertain to  $C_2$  and  $V_2$ , respectively. Identification of  $C_3$  by the suffixal /-t/ yields a well-formed structure.

## 6. ARGUMENTS REGARDING THE DERIVATIONAL STATUS OF VERBS

The arguments developed in the preceding section are valid only if it is true that verbs of the  $sr = u-u$  and  $rD = i-a$  classes, but not those with  $V_2 = [a]$ , i.e.  $dn = a-u$ ,  $rm = \emptyset-i$  and  $nh = a-a$ , are derived. The present section is designed to substantiate this claim.

<sup>24</sup> When discussing the same verbs under, the progression of the discussion did not allow for proper representations. They need to be revised according to. That is, the suffix /-tu/ ends up identifying  $C_3$  and  $V_3$ , all other things being equal.

## 6.1. Deaf verbs

Deaf verbs demonstrate the split between verbs with  $V_2 = /a, \emptyset/$  vs. those showing [i,u] in  $V_2$ . Indeed, verbs of the  $md = a-u$  class lack  $V_2$  which is straddled by the duplicated second radical. However,  $V_2$  appears on the surface in verbs with  $V_2 = /i, u/$  that express a quality, a defect or a colour. (24) provides illustration of these.<sup>25</sup>

(24)

$V_2 = /a, \emptyset/$			$V_2 = /i/$ : quality, defect, colour			$V_2 = /u/$ : quality, defect, colour		
	pf	ipf		pf	ipf		pf	ipf
md	madd-a	ya-mudd-u	Hb	Habib-a	ya-Hbab-u	Hb	Habuba	ya-Hbub-u
sm	samm-a	ya-summ-u	Hs	Hasis-a	ya-Hsas-u			
ms	mass-a	ya-muss-u	dn	danin-a	ya-dnan-u			
mr	marr-a	ya-murr-u	Sm	Samim-a	ya-Smam-u			
lb	labb-a	ya-lubb-u	lH	laHiH-a	ya-lHaH-u			
qr	garr-a	ya-qurr-u	ms	mašiš-a	ya-mšaš-u			
sl	sall-a	ya-sullu	mh	mahih-a	ya-mhah-u			
sb	sabb-a	ya-subb-u	hs	hašiš-a	ya-hšaš-u			

## 6.2. Semantic relations among verbs

It is traditionally argued that the second root-vowel denotes certain semantic properties of the verb in Classical Arabic. Roughly speaking,  $V_2 = [a]$  induces transitivity, while  $V_2 = [i]$  and [u] are found in intransitive verbs and those whose action is not a matter of choice of the subject. The latter subdivide into verbs with  $V_2 = [u]$  that express inherent and inalterable properties (e.g. *kbr* “be tall”) and those with  $V_2 = [i]$ , which designate acquired properties or physical states subject to change (e.g. *sqm* “be ill”, *Hzn* “become sad”). Verbs with  $V_2 = [i, u]$  may be subsumed under the label *mediopassive*. Both modern authors and the Arabic Grammarians have identified this kind of semantically driven distribution of the second root-vowel.<sup>26</sup>

However, the state of affairs that we have access to through Classical Arabic obeys this semantic distribution of root-vowels only as a tendency. Chekayri (1994:59ff) and Guerssel

<sup>25</sup> See Chekayri (1994: 199f) for more detailed discussion. Glosses (left-to-right, up-down): “to extend, to be loved, to be loved, to put poison into some thing, to feel sympathy, to feel, to be round-shouldered, to pass/ go/ walk, to become deaf, to hit with the fist, to have the eyelids stuck together, to settle down, to have an excrescence (body), to pull out, to be soft, to abuse/ insult, to be vile”.

<sup>26</sup> See for example Chekayri (1994: 59ff, 1995, 1997).

& Lowenstamm (forth) have shown that the sense of a large number of verbs does not allow prediction of their root-vowel. Hence, the semantic relations mentioned must have controlled the verbal system of the language at some time anterior to the stage we know of. Classical Arabic speakers had no way of deducing the vowel from semantics, and thus the second root-vowel had to be part of the lexical representation of each verb at that time. This is the reason why we have referred to it as the *lexical vowel* all through this paper.

Apart from the widely acknowledged semantic properties of the second root-vowel, Bohas (1997), Bohas & Chekayri (1991,1993), Chekayri (1994,1997,1998) have brought to light stable semantic relations holding between trilaterals that differ only with respect to one consonant. Finally, Chekayri (1997,1998) demonstrates the existence of a substantial number of verbs with  $V_2 = /ø, a/$  that have a partner which is identical in all respects except with regard to  $V_2$ . In these cases,  $V_2$  is either /i/ or /u/, and the verb carries the mediopassive meaning. Consider the following pairs, many more of which can be found in Chekayri (1997,1998).

(25)

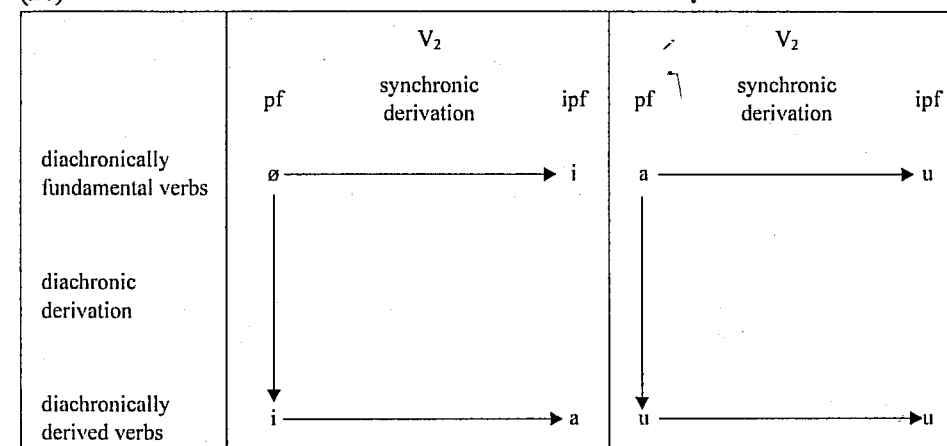
perfective	ipf $V_2$	active	perfective	ipf $V_2$	passive and/or reflective
?abad	i, u	flee from inhabited places	?abid	a	be uninhabited, unfrequented
?atay	i	enter sb's territory, invade sth	?atiy	a	be threatened with the invasion of the enemy
?asad	i	abuse s.o.	?asid	a	be struck with fear
?ašab	i, u	to mix	?ašib	a	be mixed
?afan	i, u	depressive s.o. of wisdom	?afin	a	be stupid
?aqaT	i	season the food with cheese	?aqiT	a	be in abundance (cheese)
balat	i	moisten, damp	balit	a	become moisten, damp
baxar	a	evaporate s.th.	baxir	a	have unpleasant smell
baxaq	a	blind s.o.	baxiq	a	be one-eyed
bahaj	i	make s.o. happy	bahij	a	be happy
basat	u	put s.o. at his ease	basuT	u	be quite well off
habb	u	love	habub	u	be loved

It is natural to assume a derivational link between both members of these pairs: their semantics as well as their consonants are stable, they differ only with respect to  $V_2$  and the opposition active vs. mediopassive. If the active member of such a pair has  $V_2 = /ø/$ , its mediopassive correspondent shows [i], and if the former has /a/, the latter comes along with a [u]. These are both vocalic alternations which instantiate a perfect apophonic relation in the sense of (2). Semantically, it is not odd either to consider active verbs as the basic category, from which mediopassives are derived.

In sum, the derivational link that has been evidenced simply points to an activity of lexical creation in pre-classical times that had recourse to apophony. Mediopassives were

built on the basis of active verbs. And indeed, as was claimed earlier, mediopassives, that is verbs with  $V_2 = /i, u/$ , but not actives with  $V_2 = /ø, a/$ , are derived, and their derivational syllable is therefore accessed. Figure (26) sums up diachronic and synchronic derivational relations in the Classical Arabic verb that employ apophony.

(26)



### 6.3. Stability of glides in imperfective forms of assimilated verbs

In section 2, we have stated that the glide of assimilated verbs does not appear in imperfective forms. In fact, this is true for verbs with  $V_2 = /ø, a/$  only. The glide is present in almost all verbs with  $V_2 = /i, u/$ . Consider the numerical proportions given under (27).<sup>27</sup>

(27)

	$V_2 = ø$ i	$V_2 = a$ u a a	$V_2 = i$ a	$V_2 = u$ u
glide present in ipf	1	11	64	40
example	wa <sup>c</sup> ak – ya-w <sup>c</sup> ik	wajaz – ya-wjuz wazar – ya-wzar	wa?ib – ya-w?ab	wafur – ya-wfur
glide absent in ipf	205	43	12	2
example	wazan – ya-zin	wajad – ya-jud wahab – ya-hab	watig – ya-tag	waxuš – ya-xuš

<sup>27</sup> Statistics are from Chekayri (1998), where a more elaborate presentation can be found. There are also cases where both forms with and without a glide are attested, e.g. waSa<sup>c</sup> – ya-Sa<sup>c</sup> and ya-wSa<sup>c</sup> "hide". These are not included in the statistics shown. Glosses for table (column by column): "to be very hot, to weigh, to be brief/ concise, to sin/ err/ slip, to find, to give/ donate, to be angry, to be guilty, to be abundant, to be vile".

## 7. CONCLUSION

Thus, in 248 out of a total of 260 verbs with  $V_2 = /ø,a/$ , i.e. 95%, the glide is absent in imperfective forms. On the other hand, 104 verbs with  $V_2 = /i,u/$  out of 118 do present the glide in imperfective forms, that is 88%, against only 14 glideless verbs. This distribution is not fully complementary, but almost. In any event, it is significant enough to be regarded as non-accidental.

This result is in favour of our claim that verbs with  $V_2 = /i,u/$ , but not those with  $V_2 = /ø,a/$ , are derived in the sense of the preceding section. Indeed, in our view, the glide is present in derived forms, while it is absent in basic verbs. This is exactly what is predicted by the existence of the derivational syllable: the extra C V is accessible when a derivation has been performed, while it is improper for segmental identification in non-derived forms. Hence, the following representations obtain, explaining the presence vs. absence of the glide.<sup>28</sup>

(28)

a. basic verb: C V does not seek identification

$C_1$	V	<u>C V</u>	$C_2$	$V_2$	$C_3$	$V_3$
y	a	z	i	n		
y	a	j	u	d		

a. basic verb: C V seeks identification

$C_1$	V	<u>C V</u>	$C_2$	$V_2$	$C_3$	$V_3$
y	a	w	?	a	d	
y	a	w	S	u	f	

## 6.4. Augmented forms

In all augmented forms, assimilated verbs behave as ordinary sound trilaterals. That is, in forms II–XV, the glide is always present, cf. pf act. II *wazzan*, III *waazan*, etc. Whatever the reason for this fact, it shows that the derivational status is an important factor for the appearance of the glide. Namely, in forms II–XV, which are uncontroversially derived, the glide is always present, while it may (verbs with  $V_2 = /i,u/$ ) or may not (verbs with  $V_2 = /ø,a/$ ) be present in imperfective form I. If one was to state in which forms the glide is stable, the correct answer would be “in all heavily derived forms”, that is either if a derivation of morphological value has been performed (forms II–XV) or if the item was doubly derived (imperfective forms of verbs with  $V_2 = /i,u/$ ). This generalisation is missed unless verbs with  $V_2 = /i,u/$ , against those with  $V_2 = /ø,a/$ , are granted a derived status.

<sup>28</sup> The status of the derivational syllable regarding segmental identification in fact is threefold. 1) in non-derived forms, it is inaccessible, as in pf *wazan*. 2) in forms that were subject to one single derivation, e.g. perfective → imperfective, it may be accessed if segmental material would otherwise remain unaccommodated, as in ipf *ya-ktub*. Unlike the latter, ipf *ya-zin* presents only three consonants. Hence, the contribution of the derivational syllable is not needed, and the glide is not created. 3) in doubly derived forms, the derivational syllable must be identified. Imperfective forms of verbs with pf  $V_2 = /i,u/$  are derived from active verbs. In addition, they were subject to the imperfective-derivation. Hence, the glide must be created in order to identify C V.

In the preceding sections, we have established generalisations regarding the appearance of glides in the conjugation of defective verbs in Classical Arabic measure I forms. In contrast to traditional treatments, the mechanism at work may be reduced to three simple processes, that is concatenation, apophonic glide-creation and spreading, which are hierarchised. The selection of one rather than another is driven by the fact that morphology or phonology produce sequences that are unattested in the language. The clear picture that appears by this means may only be arrived at if a certain number of assumptions are made. In particular, the problem may be understood only if defective verbs are regarded as bilaterals, the glide being absent from the lexicon. It comes into being by way of apophony upon request stemming from the Template Satisfaction Principle. The behaviour of glides also remains chaotic unless a distinction is made between apophonically created semi-vowels and those instantiating a suffixal vowel.

Finally, we have argued that a very limited anomaly in the conjugational pattern is in fact the trace of a fundamental distinction in the Classical Arabic verbal system that opposes verbs with  $V_2 = /ø, a/$  on one side to those with  $V_2 = /i, u/$  on the other. This contrast has been identified independently (Chekayri 1994, 1995, 1999). It has semantic, morphological and phonological manifestations. Namely in the case under focus here, the derivational status of both verbal classes determines the accessibility of the templatic site called the *derivational syllable* (Guerssel & Lowenstamm forth).

The theoretical devices that have proved successful when applied to defective verbs, that is apophonic glide-creation and the derivational syllable, are yet to confront to hollow verbs.

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## Transliteration

We are using standard transliteration except for the following letters:

Transliteration		Description
g	<i>gayn</i>	back-Velar, Voiced
x	<i>xaa?</i>	back-Velar, Voiceless
c	<i>ʕayn</i>	Pharyngeal, Voiced
H	<i>Haa?</i>	Pharyngeal, Voiceless
q	<i>gaaf</i>	Uvular, Voiceless
ʔ	<i>hamza</i>	Glottal, Voiceless
š	<i>šiin</i>	Alveopalatal, Voiceless
j	<i>jiim</i>	Alveopalatal, Voiced
h	<i>haa?</i>	Fricative, Voiceless
S	<i>Saad</i>	Dental, Voiced. Emphatic
T	<i>Taa?</i>	Dental, Voiceless. Emphatic
D	<i>Daad</i>	Dental, Voiced. Emphatic

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### DIE ERSTEN MUSLIME IN AKSUM — FRÜHE ARABISCHE BERICHTE NEU BETRACHTET<sup>1</sup>

Zur Geschichte des Aksumitischen Reiches ab dem 6./7. Jahrhundert besitzen wir nur spärliche Informationen aus einheimischen Quellen. Der Rückgriff auf außer-äthiopische Quellen ist zur Erhellung dieses Zeitraumes unumgänglich, und demzufolge werden ab dem 7. Jahrhundert arabische historische Quellen für unser Interessengebiet relevant. In der Sekundärliteratur<sup>2</sup> zur aksumitischen Geschichte werden diese historischen Quellen vielfach zitiert; den jeweiligen Autoren ist — in unterschiedlicher Weise — bewusst, dass diese Quellen mit einer gewissen Vorsicht zu behandeln sind. Dass die arabische Geschichtsschreibung glaubwürdige wie unglaubwürdige Berichte tradierte, war schon mittelalterlichen Autoren klar gewesen, sie trugen dem Rechnung, indem sie (wie z.B. at-Ṭabarī) sich widersprechende Traditionen nebeneinanderstellten und dem Leser die Entscheidung überließen, welche der Informationen die „richtige“ sei.

Die Aufgabe des Historikers besteht nun darin, die äußeren Schichten der literarischen Ausschmückung oder der puren Fiktion zu entfernen, um so zum „historischen Kern“ der Überlieferung vorzudringen, was aber oftmals eine kaum zu lösende Aufgabe ist. Der Historiker hat zu entscheiden — aus chronologischen oder logischen Gründen —, welche Nachricht in welchem Kontext die „ursprüngliche“ ist, stößt dabei aber schnell auf Grenzen,

<sup>1</sup> Bei diesem Artikel handelt es sich um die überarbeitete Fassung eines Vortrags, den die Verfasserin auf der 15<sup>th</sup> International Conference of Ethiopian Studies in Hamburg (21.–25. Juli 2003) gehalten hat.

<sup>2</sup> An dieser Stelle seien nur einige ausgewählte Beispiele erwähnt: J. Spencer Trimingham: *Islam in Ethiopia*. London/New York/Toronto 1952, 44ff.; Sergew Hable Sellassie: *Ancient and Medieval Ethiopian History to 1270*. Addis Abeba 1972, 186ff.; Stuart Munro-Hay: *Aksum. An African Civilisation of Late Antiquity*. Edinburgh 1991, 55f.; Richard Pankhurst: *The Ethiopians*, Oxford 1998, 39f.