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THE OLDER EGYPTIAN *sdm(.w)=f* PASSIVE REVISITED

1. Introduction

In the course of its productive language history, which spans a period of over four thousand years, Ancient Egyptian went through several developmental stages. Its earliest stage is Older Egyptian, which covers a period of more than five hundred years (ca. 2650-1990 BCE).¹ The language has a rich verbal inflection for the morphological expression of grammatical voice and transitivity alternations. While many of the world's languages lack morphological passives, Older Egyptian represents the typologically marked case of a languages with multiple passives (cf. Keenan 1985:247, Siewierska 1984:23). The one-to-many relation between active and passive verb forms produces sentence pairs of the following kind. (In the Older Egyptian examples, the three morphological passives are boldfaced and glossed as PASS1, PASS2, and PASS3).²

¹ Despite its internal differentiation into Old and Early Middle Egyptian, there is good reason to believe that Older Egyptian constitutes a linguistic continuum, with only minor structural changes in the course of generation-to-generation transmission of the language. Loprieno (1995) provides an up-to-date overview of Ancient Egyptian language history. The language material of this article is drawn from the monumental religious corpora of the Pyramid Texts and the Coffin Texts.

² The following abbreviations are used in the glosses. (Glosses are given in parentheses for morphemes that have no surface-segmental shape): 1 'first person'; 2 'second person'; 3 'third person'; AUX 'auxiliary verb'; C 'subordinating complementizer'; C_{REL} 'relative complementizer'; D 'dual'; DEM 'demonstrative'; EMPH 'emphatic particle'; F 'feminine gender', FM 'focus marker'; GER 'gerund'; LINK 'linkage marker'; IMP 'imperative'; IMPERF 'imperfective aspect'; INF 'infinitive'; INTENS/REPET 'intensive/repetitive stem pattern', M 'masculine gender'; NEG 'negative scope marker'; NOM 'nominalizing affix'; P 'plural'; PASS1 'apophonic passive 1' (*sdm(.w)=f*), PASS2 'affixal passive 2' (*sdm-t(j)=f*), PASS3 'reduplicative passive 3' (*sdm-m=f*), PCL 'particle';

- (1) n nd³r-w ċw ?kr-w
 NEG grasp-PROS you:SM earth.demon-PM
 'The earth demons will not grasp you.' (Pyramid Texts 2202c/N)
- (2) a. n nd³r(-w)-k (...) jn jr(y)-w pt t? nb
 NEG grasp-PASS1-2SM FM inhabitant-PM heaven earth every
 'You shall not be grasped (...) by any inhabitant of heaven and earth.'
 (Coffin Texts VI 84e/B3L)
- b. n nd³r-w-t(j) Nfr-k?-R? jn [?kr-w]
 NEG grasp-PROS-PASS2 Nefer-ka-Re FM earth.demon-PM
 '(King) Nefer-ka-Re shall not be grasped by the earth demons' (Pyramid Texts 2205/N)
- c. n nd³r-r-k jn ?kr-w
 NEG grasp-PASS3-2SM FM earth.demon-PM
 'You shall not be grasped by the earth demons.' (Pyramid Texts, *Jbj* 533 [pl.11])

The sample sentences in (2a-c) above illustrate what has been called the canonical passive construction in traditional grammar. The active clause in (1) and the corresponding passives in (2a-c) express the same meaning relationships between the verbal predicate *nd³r* 'to grasp' and the entities referred to by the nominal expressions. Both denote a two-place relation between the instigator or AGENT and the undergoer or PATIENT of the body-contact that is described. However, active and passive sentences differ systematically from each other with respect to the syntactic encoding of the AGENT and PATIENT nominal. In the active sentence, the AGENT *?kr-w* 'the earth demons' is inserted into the subject slot, while the PATIENT *ċw* 'you' appears in the clause-second position of direct object pronouns. By contrast, the demoted AGENT *jn jr(y)-w pt t? nb* 'any inhabitant of heaven and earth' and *?kr-w* 'earth demons' in the corresponding passive sentences are combined with the focus marker *jn* and occur in the clause-final position of adverbial modifiers. Meanwhile, the pronominal PATIENT is rendered by the second person singular masculine subject pronoun *-k* 'you' in (2a,c), abstracting away from the switch to third person reference in (2b) for the moment. In this way,

PERF 'Perfect'; PROS 'prospective aspect/mood'; PTCP 'participle'; S 'singular', STAT 'Stative inflection' (in subscript); SUBJ 'subjunctive'; TERM 'Terminative'. Epigraphic conventions: [...] passage is heavily damaged and cannot be reconstructed, (...) left out for the sake of brevity, <...> one or more characters have been erroneously omitted by the ancient scribe. NN stands for the proper name of the owner of a Middle Kingdom coffin.

the sentence patterns in (2a-c) above conform to the relational definition of the passive construction given in Perlmutter & Postal (1982).

The verb forms in (2a-c) above can be identified as passives not only in relational terms, but also in terms of morphological marking (cf. Haspelmath 1993). While the active is morphologically unmarked, there are three different markers for the morphological expression of passive voice. The *sdm-t(j)=f* passive (passive 2) is marked by the monosyllabic affix *-t(j)* (i.e. */-ti/*). As we can see in (2b), the passive morpheme *-t(j)* follows the prospective marker *-w*, which indicates future time reference (see Reintges 1997:268-78 for some discussion on its morpho-syntax). The *sdm-m=f* passive (passive 3), on the other hand, represents a reduplicative passive pattern, where the passive morpheme is a copy of the final root consonant (cf. Reintges 2003).

The morphological expression type of the *sdm(.w)=f* passive is less straightforward for two reasons. First, unlike passive 2s (*sdm-t(j)=f*), the passive morpheme *-w* of the *sdm(.w)=f* is often left unexpressed in hieroglyphic writing, as in (2a) above (see, recently, Schenkel 2004). Second, the phonological interpretation of the *-w* formative is a point of discussion: is it a glide or rather a vowel? In this article, the *sdm(.w)=f* passive will be reanalysed as an apophonic ('Ablaut') passive pattern in which the passive marker *-w* surfaces as the [+back, +rounded, +high] vowel /u/. It thus displays striking similarities with the apophonic passives in Semitic languages like Classic Arabic (e.g. *kataba* 'he wrote' ~ *kutiba* 'it is written') (see Retsö 1989 for a detailed survey).

The paper is organized as follows. Section 2 discusses some problems with earlier analyses of the *sdm(.w)=f* passive, which advocated a subdivision into three subtypes that differ from one another with respect to their syntactic distribution and temporal semantics. Section 3 presents an alternative analysis of this passive pattern in terms of apophony, i.e. morphologically conditioned changes in the vocalisation of the verbal stem. The key idea that the passive 1 marker *-w* is connected to the second vowel position of the stem template and is therefore realised as /u/. As a vowel, the passive 1 formative participates in the *-jj/-w* alternation of inflectional vowels. Section 5 summarizes the main conclusions of this paper.

2. In defence of a single *sdm(.w)=f* passive

A common trait of grammatical studies in the mid 80's and 90's is a renewed interest in the nature of hieroglyphic writing and the degree to which it reflects the actual morphological and syntactic realities of the Ancient Egyptian language. In the research tradition of the Berlin School and its successors, variant spellings of one and the same verb form were analysed as instances of defective writing.

In the more recent grapho-morphematic approach, on the other hand, irregularities in the graphic rendering of a given verb form are considered to reflect systematic structural differences between as of yet undiscovered conjugation patterns. As a result, a number of semantic and syntactic distinctions that had previously been associated with a single verbal pattern are now considered to represent separate inflectional paradigms.

Due to its broad spectrum of syntactic and semantic functions, the Older Egyptian *sdm(.w)=f* passive (passive 1) would seem as an ideal testing-ground for a grapho-morphematic discovery procedure, in the course of which a former monolithic verbal paradigm turns out to comprise three formally and functionally distinctive conjugational classes. Consider the following examples of passive 1 marked verb forms, all of which are derived from the causative biliteral verb *s-fχ* 'to release, to loosen'.

- (3) a. *s-fχ-χ-ij* nmt-wt j?χw
CAUS-loose-INTENS/REPET-PASS1 step-PF sunshine
'The steps of the sunshine will be set free.' (Pyramid Texts 1078d/P)
- b. *s-fχ-w* Nfr-k?-r? m f-w z?b-w
CAUS-loose-PASS1 Nefer-ka-Re in lake-PM jackal-PM
'(King) Nefer-ka-re will be released in the lakes of jackals.' (Pyramid Texts 1083/N)
- c. *s-fχ(-w)* Pj?pj pn m-? jm(-y) ?(-w)j
CAUS-loose-PASS1 Pepi DEM:SM from-arm in-NOM(-SM) arm-DM
'This (King) Pepi will be released from the arm chain.' (Pyramid Texts 1484e/P)³

As noted by Edel (1955:261 §554), the *-jj/-w* alternation of the passive morpheme is commonly attested in two contexts, namely when the passive 1 is combined with the pronominal suffix first person singular *-j* (i.e. /i/) 'I', which due to its vocalic character is generally not rendered in hieroglyphic writing and when passive 1s are derived from 'weak' verbs. Such alternations result from assimilatory processes between adjacent vowels, which will be discussed in section 3.2. It should be observed, however, there is no such adjacent vowel /i/ in forms like *s-fχ-χ-ij* 'will be set free' in (3a) above that could have triggered the vowel shift of the passive marker from /u/ to /i/. For this reason, Sethe (1899:194 §461)

³ Cf. Sethe (1962 V 438) and Faulkner (1969:229/fn.6) for the sense of the terms *jm(-y) ?(-w)j* (lit. 'what is in the two arms') and *jm(-y) rd* (lit. 'what is in the leg') as 'arm-chain' and 'foot-chain', respectively.

and Allen (1984:345 §512, 329 §488b) consider such forms as belonging to a distinct *sdm.jj=f* passive pattern.

The passive verb forms *s-fχ-w* in (3b) and *s-fχ(-w)* "will be released" in (3c) above represent variant spellings of one and the same underlying form: the marked form of the *sdm(.w)=f* passive is characterized by the overt expression and the unmarked variant by the suppression of the passive formative in hieroglyphic writing. Traditionally, the alternation between marked and unmarked passives has been dealt with in terms of defective writing (see, among various others, Sethe 1889:187 §443, Gardiner 1957:337 §419 and Edel 1955:261 §554). In Allen's (1984) influential study of Pyramid Text Egyptian, however, the marked and unmarked alternants of the *sdm(.w)=f* passive are treated as two separate types of passive formation. On this view, the marked *sdm.w=f* differs from its unmarked counterpart in temporal reference and distributional behaviour (see, in particular, his discussion on pp.348-58 §§ 515-529).

In what follows I will defend the conservative view of a single *sdm(.w)=f* passive. I will show that there are no morphological or semantic grounds for the proposed subdivision of the *sdm(.w)=f* passive into two separate passive patterns. Before elaborating on Allen's theory, I will briefly discuss the alleged *sdm-jj* passive.

2.1. The so-called *sdm-jj* passive

If we were to assume that the *-jj/-w* alternation of the *sdm(.w)=f* passive had, indeed, a morphological rather than a phonological basis, how could the two passive morphemes be distinguished in meaning? According to Sethe (1899:194 §461) and Allen (1984:345 §512, 329 §488b), the so-called *sdm-jj* passive is confined to plural and dual subject noun phrases. In other words, the *-jj* formative functions as a portmanteau morpheme, in which subject-verb agreement and passive voice are fused into a single unsegmentable morph. As far as I know, Gunn (1924:75 fn.2) was the first to point out the *ad hoc* character of this type of explanation. Since lexical noun phrases do not trigger agreement in active sentences, it remains a mystery why they should do so in the passive counterparts. Apart from these theoretical considerations, there is no empirical support for the advocated distributional patterns. As we can see from (4a) below, the *-w* form of the *sdm(.w)=f* does appear with dual nouns. Moreover, it is also possible for the *-jj* variant to occur with singular subjects, as examples like (4b-c) below illustrate.

- (4) a. **wn(-w)** **ʿṯ-w(j)** **pt(r)**
 open-PASS1 door-DM sky-window
 'The two doors of the sky-windows are opened.' (Pyramid Texts 1203c/N)
- b. **n** **sq-jj** **n-f** **wdnt**
 NEG beat-PASS1 for-3SM offering
 'An offering will not be prepared for him.' (Pyramid Texts 323c/P)⁴
- c. **s-ʔχ-jj** **sχm** **pn** **n** **bʔ-f**
 CAUS-be glorious- PASS1 powerful.one DEM:SM for soul-3SM
 'This powerful (one) is glorified on account of his soul.' (Pyramid Texts 789a/P)

Since there is no clear empirical evidence for a separate *sdm-jj* passive, it seems more promising to look for a phonological basis of this phenomenon. Section 3.3 presents a phonological analysis in terms of vowel harmony.

2.2 Marked and unmarked *sdm(.w)=f* passives

Allen's theory of the morphological contrast between a marked *sdm.w=f* and an unmarked *sdm=f* passive rests upon the following assumptions. First, both passive patterns are said to have different temporal values. While the marked *sdm.w=f* conveys a future meaning, while its unmarked *sdm=f* counterpart is used for passive sentences with past or present tense reference. Second, the marked *sdm.w=f* passive is in complementary distribution with the reduplicative passive 3, which combines passive meaning with future tense reference. As will be shown in the following two subsections, there is no empirical support for the hypothesized difference in meaning and syntactic distribution between marked and unmarked forms of that passive pattern.

⁴ Contrary to what is stated in Allen (1984:563, appendix §736) and Edel (1955:265 §558), *sq* 'to beat' qualifies as a biliteral verb. This is evident from the reduplicative passive alternant *sq-q* 'will be beaten' in Pepi I, fragment *Orientalia* 38 (1965) fig. 25:2). The augmented verb stem *sqr* is attested with both passive 1s (*sqr(-w)* 'will be beaten' Coffin Texts I 79g/B1P, II 49d/S1C, II 190b/B3L) and passive 2s (e.g. *sqr-ʔ(j)* 'will be beaten' Coffin Texts II 190b/B1C, V 292c/B2Bo, VI 87d/B1Bo) in the Coffin Texts. There is no attestation of a reduplicative passive **sqr-r*. See Reintges (2003:177-9) for further discussion.

2.2.1. Temporal distinctions between marked and unmarked *sdm(.w)=f* passives?

Assume for the moment that the grammar of the Pyramid Texts makes, indeed, a neat distinction between marked and unmarked *sdm(.w)=f* passives alongside the [±future] split of the active tense system. On this assumption, one would expect the marked *sdm.w=f* passive to be systematically absent in non-future contexts. This prediction is not borne out by the empirical evidence, which shows instead that marked *sdm.w=f* passives may appear in passive clauses describing past events. Thus, consider the following passage from the Pyramid Texts, which presents an analogy between a mythical precedent and the fate of the deceased king. Due to the parallelism of both incidents, I assume, with Sethe (1899:189 §451), that the Perfect verb forms *jwr-n* 'has conceived' and *ms-n* 'has born' are located in the same temporal sphere as their passive counterparts *jwr(-w)* 'has been conceived' and *ms.j-w* 'has been born'. According to Allen (1984:361 §533c), the marked form *ms.j-w* has a future interpretation. However, in view of the fact that both *jwr(-w)* and *ms.j-w* describe different aspects of the same situation, (the conception and birth of the divine king together with the god Osiris), one may safely assume that there is a single time frame for this narrative segment, which is located in the past.

- (5)
- | | | | | | |
|----------------|-------------------|--------|-------------|-----|-------------|
| jwr-n | SW _{sic} | pt | ms-n | sw | dwʔt |
| conceive-PERF | him | heaven | bear-PERF | him | dawn |
| jwr(-w) | Pjpj | pn | finʔ-f | jn | pt |
| conceive-PASS1 | Pepi | DEM:SM | with-3SM | FM | heaven |
| ms.j-w | Pjpj | pn | finʔ-f | jn | dwʔt |
| bear-PASS1 | Pepi | DEM:SM | with-3SM | FM | Netherworld |
- "Heaven conceived him (the god Osiris), dawn bore him. This (King) Pepi was conceived with him, this Pepi was born with him." (Pyramid Texts 1527a-c/P)

Not only are marked *sdm.w=f* passives are found in past tense contexts, there are also examples of unmarked *sdm(.w)=f* passives that indicate future tense. A particularly illustrative example is (6) below, where the unmarked passive *sdm(.w)=f wn(-w)* 'will be opened' receives a future tense interpretation from the future participle *wd-ʔ(j)-f* 'he who will place'. Furthermore, note that the unmarked passive 1 *wn(-w)* 'will be opened' is construed in parallel fashion with the reduplicative passive 3 *wdʔʔ-f* 'will be judged', whose future reference is part of its grammatical meaning (cf. Reintges 2003:180f.).

- (6) nčr nb wd-t(j)-f ʕ-f
 god every place-FUT:PTCP-3SM arm-3SM
 m dʕr fir n(j) Wnjs r-k dwʔ-f ʕw
 when turn face LINK(-SM) Unas to-2SM worship-3SM you:SM
 n wdʕʕ-f mdw-f m jm(-y) njwt-f
 NEG judge-PASS3 word-3SM as in-NOM(-SM) town-3SM
 n wn(-w) n-f ʕʔ-wj fitm-wt
 NEG open-PASS1 for-3SM door-DM provision-PF
 'Every god who implants an obstacle (lit. places his arm), (when) the face of (King) Unas turns to you (while) he worships you, (...) his case will not be judged as a citizen (lit. one who is in his town) and the two ports of provision will not be opened for him (either).' (Pyramid Texts 484a-485c/W)⁵

The empirical evidence for the putative meaning differences between marked and unmarked *sdm(.w)=f* passives is far from conclusive. Reintges (1997:374ff) shows that the *sdm(.w)=f* passive has aspectual values and indicates perfective as well as Perfect (Anterior) aspect, but has no inherent tense value. It is therefore compatible with future and non-future time reference.

2.2.2. Distributional behaviour

According to Allen (1984:348 §515), the distribution of marked *sdm.w=f* passives and the reduplicative passive 3s among various morphological classes of verbs indicates that both morphological passives are actually the "complementary expressions of a single marked passive" that are contrasted with the unmarked *sdm=f* passive. While there are no selectional restrictions on the unmarked *sdm=f*, its marked *sdm.w=f* counterpart is said to be compatible only with 'weak' triliteral and and 'strong' causative biliteral verbs (see in particular his discussion on pp. 329-30 §488c). By contrast, the reduplicative passive is said to have a broader lexical distribution, including geminated biliteral, 'strong' triliteral, and 'weak' quadriliteral verbs (cf. Allen 1984: 349 §515). See table 1 below for further illustration.

⁵ Unlike Sethe (1962 II 317), I take the gerund *fitm-wt* not to mean 'destruction' but rather 'provisions'. This term is also attested in Pyramid Texts 1329a/P 'the provisions (*fitm-wt*) have raised you' (see also Faulkner 1969:95, fn.7).

Marked <i>sdm.w=f</i> passive	Reduplicative <i>sdm.m=f</i> passive
'weak' triliteral vbs. (e.g. ms.j 'to bear')	intensive/repetitive vbs. (e.g. ʔm-m 'to seize')
causative biliteral vbs. (e.g. s-fʕ 'to release')	'strong' triliteral vbs. (e.g. jwr 'to conceive')
	'weak' quadriliteral verbs (e.g. ndʕr.j 'to grasp')
Unmarked <i>sdm=f</i> passive	

TABLE 1. The distribution of marked and unmarked *sdm(.w)=f* passives among various morphological classes of verbs according to Allen (1984: 348-358 §§515-529)

Closer inspection of the data reveals, however, that the advocated distributional patterns are only partially correct. Contrary to what is stated in Gardiner (1957:343 §425) and Allen (1984:349 §515), reduplicative passive 3s are in complementary distribution with both reduplicated and geminated intensive/repetitive verb stems. To see this, consider the following passive sentences, in which the triliteral verb *ʕfʕ* 'to grasp' occurs a reduplicative passive 3, while the near-synonymous intensive/repetitive biliteral verb *ʔm-m* 'to seize' appears as an unmarked passive1. Reintges (1997:251-5) hypothesizes that this non-cyclicity of reduplicative copying has its basis in some economy principle preventing the generation of strings of two adjacent copies of the root morpheme, which would leave room for too many parsing options.

- (7) n ʕfʕ-f bʔ-j jn ʔkr-w
 NEG grasp-PASS3 soul-1S FM earth.demon-PM
 n ʔm-m(-w) bʔ-j jn fikʔ(-w)
 NEG seize-INTENS/REPET-PASS1 soul-1S FM magic-PM
 "My soul will not be grasped by the earth demons, my soul will not be seized by magic." (Coffin Texts I 398:a-b/S1C)

Allen's theory is considerably weakened by the fact that a number of bi- and triliteral verbs are attested with marked *sdm.w=f* passives in the Coffin Texts. Consider the following two sentence pairs, where the a-examples are taken from the Pyramid Texts and the b-examples from the Coffin Texts. The Coffin Texts examples in (8b) and (9b) conclusively show that bi- and triliteral verbs are rendered as marked *sdm.w=f* passives. The absence of such forms in the Pyramid

Texts should be seen as an accidental gap in the database rather than a grammaticality restriction (cf. Schenkel 2004:177-83).

- (8) a. *wn(-w)* *ʕw-w(j)* *pt(r)*
 open-PASS1 door-DM sky-window
 'The two doors of the sky-windows are opened.' (Pyramid Texts 1203c/N)
- b. *jw* *wn-w* [*ʕnn-w*] *jm(-y)-w* *mwt-w-j*
 AUX open-PASS1 coil-pm in-NOM-PM entrails-PM-1S
 'The [coils] inside my entrails have been opened.' (Coffin Texts II 115c/G2T)⁶
- (9) a. *ʔsx(-w)* *n-k* *bd*
 reap-PASS1 for-2SM emmer
 'Emmer will be reaped for you.' (Pyramid Texts 657a/T)
- b. *ʔsx-w* *n-č* *bd*
 reap-PASS1 for-2sf emmer
 'Emmer will be reaped for you.' (Coffin Texts I 286a/Sq3C)

Allen's claim that the graphic contrast between marked and unmarked *sdm(.w)=f* is morphologically distinctive in the Pyramid Texts is invalidated by the following sentence pairs, which differ minimally with respect to the marked or unmarked character of the selected passive 1 form.

- (10) a. *s-ʕb(-w)-k* *fir-tp* *ʔbt-k* *m* *sxt* *Jʔrw*
 CAUS-be.clean-PASS1-2SM on-top *shâbet*-plant-2SM in field Jarû
 'You will be cleansed on top of your *shâbet*-plant in the Jarû-field (a toponym).' (Pyramid Texts 1164d/N)
- b. *s-ʕb-w-k* *fir-tp* *ʔbt-k* *m* *sxt* *Jʔrw*
 CAUS-be.clean-PASS1-2SM on-top *shâbet*-plant-2SM in field Jarû
 'You will be cleansed on top of your *shâbet*-plant in the Jarû-field (a toponym).' (Pyramid Texts 1164d/P)

⁶ Interestingly, the SIC version employs the unmarked *sdm(.w)=f* passive *jw wn(-w)* without any obvious difference in temporal interpretation.

- (11) a. *s-n-χb-χb(-w)* *n-k* *z-w* *wr-w*
 CAUS-PFX-unbolt-INTENS/REPET-PASS1 for-2SM bolt-PM big-PM
 'The big bolts will be unbolted for you.' (Pyramid Texts 572d/T)
- b. *s-n-χb-χb(-w)* *n-k* [*z-w*] *wr-w*
 CAUS-PFX-unbolt-INTENS/REPET-PASS1 for-2SM bolt-PM big-PM
 'The big bolts will be unbolted for you.' (Pyramid Texts, *Pepi* II 709+17-18 [pl. 6])

Not only do marked and unmarked passive 1 forms appear in parallel versions of the same spell, they may also occur side by side, as in the following example of a conditional construction. It should be observed that both the marked passive *fiw-w* and its unmarked alternant *fi(w)(-w)* 'will be beaten' are construed in parallel fashion with the reduplicative passive *χsb-b* 'will be driven away', which has inherently future meaning.

- (12) *fiw-w* *Wnjs* *fi(w)(-w)* *Jtm*
 beat-PASS1 Unas beat-PASS1 Atum
χsb-b *Wnjs* *m* *wʔt* *tn* *χsb-b* *Jtm*
 drive.away-PASS3 Unas from path DEM:SF drive.away-PASS3 Atum
 '(If) (King) Unas will be beaten, (then) (the god) Atum will be beaten.
 (If) (King) Unas will be driven away from this path, (then) Atum will be driven away.' (Pyramid Texts 492c-d/W)

To accommodate these counterexamples, Allen (1984:348 §515) argues that marked *sdm.w=f* passives may sometimes alternate with their unmarked counterparts. Because of this, and because marked and unmarked *sdm(.w)=f* passives may appear in free variation in certain syntactic contexts, there is no formal criterion to distinguish both variants.⁷

⁷ An attempt to further systematize Allen's theory is found in Schenkel (1985:490-1), who argues that the marked *sdm.w=f* and the reduplicative *sdm.m=f* passive pattern are both derived by reduplicative copying. To derive the written form *jr-w-f* 'he will be made', Schenkel supposes that the epenthetic vowel /i/ is actually a fully-fledged root consonant; the root entry for the verb *jr(.i)* 'to make' would therefore be /j-r-j/. The reduplicated form of this root is considered to be *j-r-j-j*. Schenkel conjectures that reduplicative passives contain the prospective marker -w, which is phonologically realized as /u/ between the last root consonant and its reduplicant. The resulting form *j-r-j-u-j* is subject to an additional phonological process, as a result of which the reduplicated root consonant is assimilated to the vocalic prospective marker /u/, yielding *j-r-j-u-w*. This output is rendered as *jr-w* in hieroglyphic writing.

Schenkel's proposal has a number of empirical and theoretical drawbacks, however. First, if the alleged reduplicant -j assimilates to the prospective marker at the level of

This concludes my discussion of the state of the art with respect to the Older Egyptian *sdm(.w)=f* passive. I hope to have shown that there is no convincing empirical support for the subdivision of this morphologically passive pattern into three formally and functional distinctive subtypes. The problems with the split-*sdm(.w)=f* passive hypothesis is in some ways symptomatic for the general limitations of the applied grapho-morphematic approach, whose preconceived notion of a one-to-one correspondence between spelling variation and paradigmatic complexity ultimately leads to an inflation of morphological and semantic distinctions. It seems therefore more promising to relate the different writings of one and the same piece of inflection to phonologically conditioned alternations in the shape of the base morpheme or aspects of prosodic structure.

3. The apophonic nature of the *sdm(.w)=f* passive

This section outlines alternative analysis of the Older Egyptian *sdm(.w)=f* passive as an apophonic passive pattern. What I want to show in particular is that the passive 1 formative *-w* surfaces as a vowel /u/, which is linked to the second vowel position of the verbal stem. In this respect, the *sdm(.w)=f* passive is reminiscent to the one found in Semitic languages. The proposed analysis provides a natural and straightforward explanation not only for the graphic contrast between marked and unmarked *sdm(.w)=f* passives, but also for the *-jj/-w* alternation of the passive formative.

3.1. Epenthesis and the templatic structure of Older Egyptian verb forms

To lend credence to the apophonic analysis of passive 1 formation, I will briefly discuss vowel and consonant epenthesis that add extra phonological material to an input form. Such prosodically driven readjustment procedures provide us with some insight into the templatic structure of Older Egyptian verb stems (see McCarthy & Prince 2001 for a concise introduction to prosodic morphology). Bi- and tri-consonantal verbs fall into two classes, traditionally

surface structure, why do we find forms like *jr-jj* ‘will be done’ (Pyramid Texts 1251a/P), (Coffin Texts I 232d/B17C), suggesting that the alleged root consonant *-j* has simply been reduplicated without the prospective marker *-w* in the underlying representation? Second, on Schenkel’s account, only ‘weak’ verbs could have a marked *sdm.w=f* passive. This cannot be true, however, given that other verbal classes, such as causative biliteral verbs like *s-fx-w* ‘will be released’ in ex. (3b) of the main text are attested with marked *sdm.w=f* passives, despite the absence of such an epenthetic element. It seems therefore fair to conclude that Schenkel’s approach adds to rather than solves the empirical and theoretical problems relating to Allen’s theory of marked and unmarked *sdm(.w)=f* passives.

known as ‘strong’ and ‘weak’ verbs. Strong verbs like *χpr* ‘to exist’ can be used as finite verb forms without further measures being taken. Weak verbs like *nχ.j* ‘to endure’, on the other hand, have an epenthetic vowel /i/ after the final root consonant, which is occasionally rendered in hieroglyphic writing as .j:

- (13) *nχ.j* rn-k χr rmč(-w) χpr rn-k χr nčr-w
endure name-2SM under man-PM exist name-2SM under god-PM
‘Your name endures under the people, your name exists under the gods.’
(Pyramid Texts 256d/W)

Reintges (1996:235ff) argues that ‘weak’ consonants are not part of the verbal root proper, but rather serve a purely prosodic role: bi-consonantal roots would normally surface as a monosyllabic stem template $C_1V_1C_2$. In weak verbs like *nχ* ‘to endure’, however, the addition of the epenthetic vowel /i/ creates an extra vocalic position V_2 , the result being a bisyllabic stem template $C_1V_1C_2V_2$. See figure 2 below for further illustration (σ indicates syllable, V vowel and C consonant):

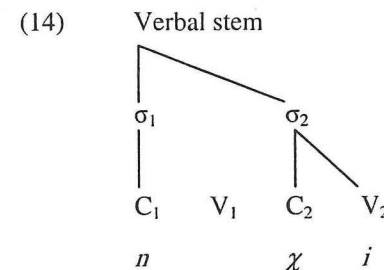


FIGURE 2. The stem template of epentheticized ('weak') verbs

By contrast, strong verbs like *χpr* ‘to exist’ do generally not undergo vowel epenthesis. This must be so, because triliteral verbal roots can mechanically be arranged into a bisyllabic $C_1V_1C_2V_2C_3$ template. In a sense, then, epenthesis is a means of readjusting ‘lighter’ roots to the bisyllabic templates of tri-consonantal verbs, which represents a prosodically optimal form.

Vowel epenthesis interacts in complex ways with consonant epenthesis in the formation of infinitival ‘weak’ verbs. As shown by (15) below, strong triliteral verbs like *sd³m* ‘to hear’ have an infinitival form that looks essentially the same as the corresponding ‘bare’ verbal stem (i.e. the stem without tense or aspect markers).

- (15) r **sd³m** wʔ-k(j)
 to listen(-INF) 'be.alone-1S_{STAT}
 'To listen being (all) alone' (*Urkunden* I 100:14)

By contrast, the infinitive of epenthesized 'weak' verbs like *rd³(.j)* 'to give' takes a different form than the corresponding 'bare' stem. Such infinitival forms have a word-final segment *-t*, which is not a root consonant.

- (16) m **rd³-t** sw Rʕ
 in give-INF it Re
 'Through the granting of it (the dawn) (by) (the un-god) Re' (Pyramid Texts 1808a/N)

The addition of the consonant *-t* is due to the templatic structure of infinitives, which terminates in a consonant $C_1V_1C_2V_2C_3$. Whereas 'strong' trilateral verbs fit in naturally into the infinitival template, their weak counterparts run short of the stem-final consonant position C_3 . The epenthetic consonant *-t* is inserted as a default consonant into that position, as schematically represented in figure 3 below.

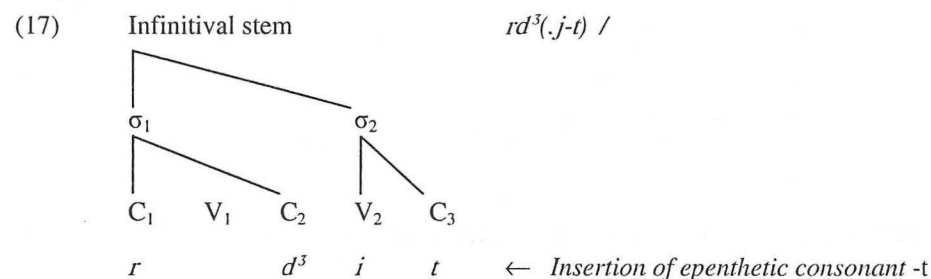


FIGURE 3. The infinitival template of epenthesized ("weak") verbs

In the infinitive, 'weak' verbs undergo vowel and consonant epenthesis to meet certain prosodic conditions on verbal templates. This contrasts with strong verbs, where no such readjustment procedures are operative.

3.2. Passive 1 formation and the vocalisation of the second root consonant

The second vowel position that follows the final root consonant may contain an epenthetic element *.j* (i.e. /i/) with a purely prosodic role, but this position may also be used for what one might call inflectional vowels. Inflectional vowel may be of different categories. The focus of this section is on the passive 1 marker *-w*, but the homophonous prospective marker *-w* and the third person masculine agreement ending *-w* of the Stative conjugation may occupy the same templatic slot. Consider the passive 1 form *χsf-w* 'will be repelled' in (18) below, where the inflectional vowel /u/ is rendered as *-w* in hieroglyphic writing.

- (18) n **χsf-w** rʔ-j
 NEG repel-PASS1 spell-1s
 "My spell will not be repelled." (CT III 341e/S1C)

On the basis of the Akhmîmic-Coptic cognate form 𐩧𐩨𐩣𐩤 /ho:səf/ "to despise", the first vowel can be reconstructed as /a/, given the /a/ → /o/ vowel shift in the transitional period from Late Egyptian to Coptic (see Loprieno 1995:38-9 for relevant discussion). The first vowel is lexically specified. The second vowel position is not so specified. As schematically represented in figure 4 below, this position can be associated with the passive 1 formative *-w*, which thus surfaces as the [+back, +rounded, +high] vowel /u/.

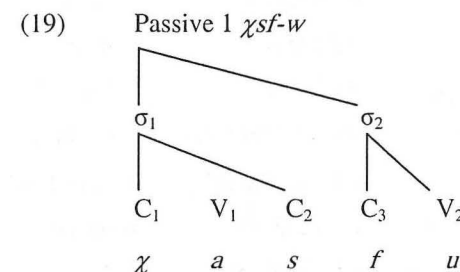


FIGURE 4. The templatic structure of passive 1 form *χsf-w* /χas.fu/

Under the analysis of the *sdm(.w)=f* passive as a Semitic-type apophonic passive, the graphic contrast between marked and unmarked forms can be accounted for in a natural way in terms of two different orthographic strategies for rendering inflectional vowels. The unmarked variant *sdm(.w)=f* stems from a phonologically driven notation system, which categorically suppresses vowels in writing, regardless of their morphological function. The marked variant *sdm.w=f*, on the other hand, stems from a morphologically driven notation system that

occasionally expresses vowels when they are distinctive morphemes. An analysis along these lines permits a profound simplification of Older Egyptian grammar, since there is only a single passive patterns with a vocalic passive marker /u/ that is associated with the inflectional V2 position of the stem template.

3.3. Assimilatory processes and vowel harmony

Crucial empirical support for the proposed analysis of the passive 1 formative *-w* as an inflectional vowel /u/ comes from the *-jj/-w* alternation. Consider the representative data in (20). The first column shows instances of underived forms, the second column presents the corresponding assimilated forms. The contrast between *sdm(.w)=f* forms ending in *-jw* (i.e. /iu/) in the first column of (20a) and alternating forms ending in *-jj* (i.e. /i:/) suggests the passive morpheme *-w* may undergo an optional process of progressive assimilation to the preceding epenthetic vowel: *jč.j-w /ičiu/ → jč.j-j /iči:/* ‘is taken’. A similar situation obtains in (20b), the main difference being the direction of assimilation. In regressive assimilation, the passive morpheme *-w* is assimilated to the vocalic person singular clitic pronoun *-j* (i.e. /i/): *ms-w-j /misui/ → ms-j-j /misi:/* ‘I was born’. The *-jj/-w* alternation of ‘strong’ biliteral verbs is shown in (20c).

(20) The *-jj/-w* alternation of the *sdm(.w)=f* in the Pyramid Texts (PT) and the Coffin Texts (CT)

a.	<i>jč.j-w</i>	PT 1042b/N	<i>jč.j-j</i>	PT 991d/N	‘is taken’
	<i>jr.j-w</i>	PT 1473a/P	<i>jr.j-j</i>	PT 1251a/P	‘is made’
	<i>fi(w).j-w</i>	PT 492c/P	<i>j.fi(w).j-j</i>	PT 393a/W	‘is beaten’
b.	<i>ms-w-j</i>	CT II 3g/ G1T	<i>ms-j-j</i>	CT VI 86e/ B9C	‘I was born’
	<i>jč(-w)-j</i>	CT IV 12a/ B3L	<i>jč-j-j</i>	CT IV 12a/ B2L	‘I was taken’
c.	<i>wn-w</i>	CT II 115c/ G2T	<i>wn-jj</i>	PT 1203c/P	‘is opened’
	<i>mfi-w</i>	PT 1205b/P	<i>mfi-j</i>	PT 1205b/N	‘is filled’
	<i>s-fχ-χ(-w)</i>	CT VI 357i/ B3Bo	<i>s-fχ-χ-jj</i>	Neith 801	‘is loosened’

The assimilatory processes in (20a-b) are strictly local; in all cases an adjacent [+front, +rounded, +high] vowel /i/ could be identified as the relevant phonological trigger. No such trigger seems to be present in the biliteral verbs and their causative counterparts in (20c) above. Yet, we observe the same kind of *-jj/-w* alternation, which is indicative of vowel assimilation. What we are dealing with is a case of non-local assimilation or vowel harmony, where the vocalic

passive marker *-w* (i.e. /u/) is assimilated to the lexical vowel /i/ in the first vocalic position of the stem template. The /i/ vocalisation of ‘strong’ biliteral verbs is unexpressed in hieroglyphic writing, but appears in some Coptic cognate forms. Thus, compare:

(21)	Older Egyptian form	Coptic cognate		
wn	to open	ⲟϣⲉⲛ- /wen/ ⁸	S.A.A2.F	to open
mfi	to fill	ⲙⲉⲓⲓ- /meh/ ⁹	S.F	to fill
s-fχ	to release	ⲥⲓⲩⲩⲓ /sifəf/ ¹⁰	S	piece, fragment

The graphically invisible vowel /i/ appears to be responsible for the observed fronting of the passive morpheme *-w* (i.e. /u/) to *-jj* (i.e. /i:/). What seems to be going on here is that the feature [+front] is spread onto the second vowel position of the stem template, which hosts the passive morpheme: *wn-w /winu/ → wn-jj /wini/* ‘is opened’. The formal analysis of palatal harmony between the passive formative *-w* (i.e. /u/) and the theme vowel /i/ is schematically represented in figure 5 below.¹¹

⁸ The /o/ vocalisation of the absolute state stem allomorph ⲟϣⲱⲛ /won/ (S.B.F.) is a secondary process, which is derived by analogy with the vowel pattern of triliteral verb stems. See, among various others, Till (1928:148-9) and Vycichl (1983:234).

⁹ The original /i/ vocalisation has been preserved in the Akhmîmic noun ⲙⲙⲓⲓⲥ /mehe/ ‘nest’. See Osing (1976:801-2, fn. 1021) for the etymological relation between *mḥ* /mifi/ ‘to fill’ and *mḥjy* ‘nest’.

¹⁰ The metathesis of *sfx* → *sxf* is already attested in Demotic; see Osing (1976:806, fn.1040). It seems plausible to assume that the causative prefix *s-* has been reanalysed as part of the root structure, which explains the insertion of the theme vowel /i/ between the /s/ and the /χ/.

¹¹ Note that /u/ is a [+rounded] vowel. Spreading of the feature [+front] would result in /ü/. We speculate that, since the language has no [+front, +rounded, +back] vowel /ü/, /i/ is the natural result. See van der Hulst & van de Weijer 1995 for a typology of vowel harmony systems.

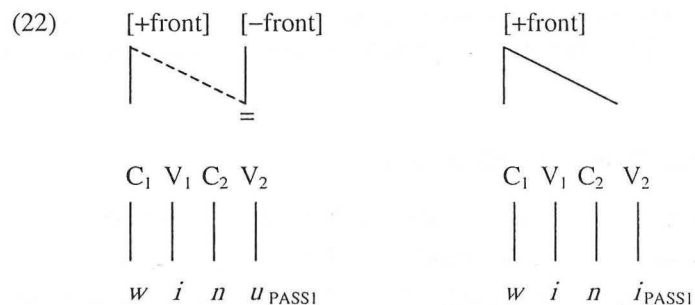


FIGURE 5. The phonological representation of palatal harmony

The analogy between palatal harmony and the assimilatory processes mentioned before receives a straightforward explanation if we assume with McCarthy (1989:87-9) that vowels and consonants are segregated on distinct levels of morphological representation or tiers. On the vocalic tier, three different types of vowels are adjacent to each other, viz. (i) lexically specified vowels, (ii) epenthetic vowels, and (iii) inflectional vowels like the passive 1 formative. Regardless of their functional role, these vowels may undergo assimilatory and vowel harmonic processes.

4. Summary and conclusions

This study has outlined a new approach to the Older Egyptian *sdm(.w)=f* passive, which was reanalysed as an apophonic passive pattern familiar from the well-studied Semitic languages. I presented two types of arguments for the vocalic nature of the *-w* formative. The first argument concerned the graphic contrast between marked and unmarked *sdm(.w)=f* passives. I showed that grapho-morphematic theories on the subdivision of the *sdm(.w)=f* passive into two formally and functional distinctive inflectional paradigms lack empirical support and are weakened by many inconsistencies in the lines of analysis pursued. The alternation between orthographically marked and unmarked *sdm(.w)=f* forms receives a straightforward explanation in terms of two different strategies for the graphic expression of the apophonic passive: one that categorically suppresses vowels in hieroglyphic writing and another one that renders vowels occasionally, especially when they have a distinctive morphological role. The second argument for the apophonic nature of the *sdm(.w)=f* passive concerned the *-jj/-w* alternation of the passive formative, which stems from phonological processes like assimilation and vowel harmony that typically involve vowels.

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BEJA PHONOLOGY: AN UPDATE

Introduction

This paper does two things: (1) It summarizes, in terms of a systematic phonology, what has been published in earlier grammars – from Almkvist 1884 to Morin 1995. (2) It draws attention to items which have received only scanty attention in previous studies – such as the relation between the Beja phonology and other aspects of the language: orthography, morphology, dialect variation, or metre.

Hopefully, the summary will facilitate the interpretation of pre-systematic data in the early publications. For instance, it can be helpful to realize that what Roper transcribes as "e" usually is, in terms of a systematic phonology, the long "e:" (which again is the morpho-phonological counterpart of the short "i"). Or it may be helpful to realize that what Reinisch transcribes as "i" often is a dialectal variant of short "a" or "u". The reason is that in southern dialects, vowels tend to be reduced to "i" which Reinisch and Roper often transcribe as schewa.¹

For this paper, the Atman dialect of Beja is the basis of the presentation, and it serves as the point of reference where data from other dialects are adduced.

The Phoneme Inventory

The Beja phoneme inventory is summarized in tables I and II. For every phoneme, the orthographic symbol has been given in <orthographic> brackets.

¹ Regularities such as these have already been suspected by Zaborski even on the basis of early, deficient transcriptions. E.g. see Zaborski's notes on discrepancies between the various sources, as far as nominal plurals are concerned (1986).