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AN OUTLINE OF BILIN PHONOLOGY

The morphology and lexicon of Bilin leave no doubt about the correctness of treating it as unrelated, except perhaps very distantly, to its Semitic neighbours. Phonologically, however, it has a great deal of resemblance to Tigrinya, and to a slightly less degree to Tigre. Typologically the relationship is remarkably close⁽¹⁾.

This paper contains, first, an outline statement of the phonology of Bilin, secondly, some remarks on the features that are of special relevance to the morphology, and, thirdly, some comments on points of difference and resemblance between Bilin and the nearby Semitic languages.

The consonants are set out in the following table:

	Voiceless	Voiced	Ejective	Nasal	
Labial	<i>f</i>	<i>b</i>		<i>m</i>	
Dental	<i>t</i>	<i>d</i>	<i>tʼ</i>	<i>n</i>	
Alveolar	<i>s</i>				<i>r, l</i>
Palatal	<i>ʃ</i>	<i>ʒ</i>	<i>ʃʼ</i>		<i>y</i>
Velar	<i>k, x</i>	<i>g</i>	<i>q</i>	<i>ŋ</i>	
Labiovelar	<i>kʷ, xʷ</i>	<i>gʷ</i>	<i>qʷ</i>	<i>ŋʷ</i>	<i>w</i>
Glottal	<i>h</i>	<i>ʔ</i>			
Pharyngeal	<i>ħ</i>	<i>ʕ</i>			

For most of the consonants the pattern is that there are four types of obstruent articulation for each point of articulation—voiceless, voiced, ejective and nasal (voiced). For the dentals, velars and labiovelars the series is complete, and the obstruents are all plosives. In the case of the labials, there is no ejective, and the voiceless member is fricative and labiodental (while the others are bilabial). The palatal series lacks a nasal member, unless a few loan words are taken into consideration; all are either fricative (the voiceless member) or affricate (the voiced and ejective members). There is but one alveolar consonant, a sibilant which is voiceless. The velar and labiovelar series have voiceless fricatives as well as voiceless plosives. These are phonemically distinct, and often have distinct morphological function as in *kɔxin/kɔkin* 'clever' (sing. and plur.) and *ʔxʷina/ʔkʷin* 'woman'.

(1) My chief informants were Mr. Teclamaryam Tecuray of Keren (Bilin), Mr. Mesgeuna Almedom of Asmara (Tigrinya) and Mr. Lijam Ishaq of Mehleb (Tigre).

'women'. The remaining consonants are four laryngeals—the glottal stop, 'h', and the voiceless and voiced pharyngeal fricatives—and the semi-vowels and the voiced alveolar lateral and trill.

The vowels are seven—*i*, *e*, *a*, *o*, *u*, *ä*, and *ə*.

Four points concerning distribution may be made.

(1) The labiovelar and velar nasals and voiceless fricatives (*ɣ*, *ɣʷ*, *x*, and *xʷ*) do not occur word-initially. Phonetically comparable with the voiceless fricatives are ejective uvular and labiouvular affricates as in *gáq* 'caves' and *saqʷ* 'fat' (plur.) (word-final in these examples). These are, however, in complementary distribution with the ejective plosives, the affricate forms occurring only in post-vocalic position, and may, thus, be written phonemically as *q* and *qʷ*; there is no contrast as in the case of *x/k* and *xʷ/kʷ*.

(2) The quality of the half open central vowel *ä* varies considerably according to its consonantal environment. In syllables containing the glottal stop or *h* it is closer than elsewhere as in 'än 'grandfather', *tärhäkʷ* 'he is interested'; in syllables containing *x* and *xʷ* it is more open than in other positions e.g., *äxən* 'let him be', *gäbäxʷ* 'who refuses'. In the immediate environment of the pharyngeals, however, it is fully open and front—and indeed is phonemically identifiable with the open front vowel *a*, though the two may always be distinguished morphologically, e.g., *qäʔ'äkʷ* 'he punishes', *gʷärhäkʷ* 'he is cunning' (= *qäʔ'äkʷ*, *gʷärhäkʷ*).

(3) There are restrictions on the sequences of liquids (to be dealt with more fully in a later section).

(4) The central vowels *ə* and *ä* do not occur word-finally.

Bilin is further characterized by a lexically distinctive feature that I refer to as 'prominence'. This rather non-committal term is preferred to 'stress' or 'tone', because while the feature is phonetically largely one of pitch, it is phonologically more like stress patterns as in English or Russian. In one word one syllable only may be prominent; or the word may contain no prominent syllable. The prominent syllable is realized phonetically by a pitch higher than that of the preceding syllable, prominence thus determining the upward steps in the intonation of the sentence.

The syllable structure is wholly statable in terms of syllable types CV and CVC, with consonant cluster thus possible only in syllable junction. The half close central vowel *ə* is to some degree a 'syllable maker'. It is largely possible to use the Ethiopic script and to employ the sixth order to represent either the vowel or the absence of any vowel. But the choice is not wholly determined phonologically, but to some degree by the morphological status of the syllables in question.

We may now consider the phonological features in relation to their grammatical function ('morphophonology')—first, vowels, secondly, consonants, and thirdly, prominence.

The vowels fall morphologically into four classes, what I call 'prosodic systems'. This is most strikingly illustrated by the vowel harmony that

is characteristic of the endings of the second and third person plural forms of the verb. In these there are two vowels and the first is at all times determined by the second. The sequences are:

- (a) *ə* — *ə*, *ä*, *o*.
 - (b) *i* — *i*, *e*.
 - (c) *ä* — *ä*, *a*.
 - (d) *u* — *u*.
- | | | |
|------------|---------------------|--------------------------|
| (a) (i) | <i>gäbdənənädik</i> | if you refused |
| (ii) | <i>gäbdənät</i> | (says) that you refused |
| (iii) | <i>gäbdənó</i> | (you) having refused |
| (b) (iv) | <i>gäbdinínädik</i> | if you bought |
| (v) | <i>gäbdinét</i> | (says) that you bought |
| (c) (vi) | <i>gäbdänät</i> | (says) that you refuse |
| (vii) | <i>gäbdänáka</i> | when you refused/refuse |
| (d) (viii) | <i>gäbduní</i> | while you refused/refuse |

There are thus four types of harmony, which I refer to as 'central', 'front', 'open' and 'back', though there are two points to note, first, that the half close back vowel *o* is to be classed as central, not back, and, secondly, that the half open central vowel *ä* falls into two systems—both central and open. This vowel classification is a distinctive feature in the morphology, as shown by comparing (i) — (iii) with (vi) — (viii); the tense paradigms fall into two classes (which I call 'aspects'), which may partially be characterized as 'past' and 'present' (though this will entail classifying the notionally future tenses with the formally past). It is also relevant in setting up verb classes, as shown by comparing (iv) and (v) with (i) and (ii) (the same tenses, but of verbs of different classes).

A second point about the vowels is that there is a correlation between the central vowels *ə* and *ä* in non-final position with *i* and *a* in final position, as shown by the different case forms of the noun *wanni*, *wannəl* 'master', *garwa*, *garwäs*, 'man'. But the close front vowel *i* may be found in both positions — *qʷəri*, *qʷəríl*, 'boys'.

Thirdly, there is a junction feature with nouns with pronominal prefixes, if these nouns have initial elements 'ä-; where the prefix has a half close central vowel *ə* the junction feature is an open front vowel *a*, and where it has a front open vowel *a* the junction feature is a half close front vowel *e*, as in 'ädära 'master', *yädära* 'my master', *nedära* 'their master', (prefixes *yə-* and *na-*).

The consonants are of importance in the morphology of the noun; there is consonantal alternation between the singular and plural forms, and in a few cases, between masculine and feminine forms. This is in most cases accompanied by some other morphological feature, but for one class of noun is either the only distinguishing feature, or is accompanied by a difference

in prominence pattern alone. To some degree the alternation may be stated in terms of voiced (singular) and voiceless (plural) pairs as in:

(b/f)	yəbá	yáf	leopard
(d/t)	gāluda	gālut	big knife
(ǵ/š)	manǵi	manšš	grindstone
(g/k)	dəngá	dənkík	vein
(gʷ/kʷ)	ʾāngʷá	ʾínkʷi	palm leaf

Voice and voicelessness is also a characteristic of the following, but with a change in the position or type of articulation:

(d/s)	mada	mas	friend
(d/š)	gədəŋ	gəššəŋ	dog
(r/t)	mašər	mašət	sickle
(l/t)	ʾālāla	ʾālāt	heifer
(w/kʷ)	tawina	takʷin	clothes

With others there is no distinction in terms of voicing:

(r/l)	bira	bil	ox
(x/k)	lāxān	lākān	ulcer
(x/q)	gaxá	gáq	cave
(xʷ/qʷ)	dəxʷara	dəqʷal	donkey

A second point about the consonants concerns stem-ending junction. The possibilities are limited by the fact that only *d*, *s*, *t*, *l*, *r*, *n* and *g* are the initial consonants of the ending. Three restrictions to be noted are:

(i) *r* does not follow *r*, *l* or *n* — *d* occurs instead as shown by *gābrākʷ* 'you (sing.) refuse', but *qʷaldākʷ*, *fārdākʷ*, *gāndākʷ*, 'you (sing.) see, go, grow old'.

(ii) *l* does not follow *r* — a geminate *l* occurs instead as in *gār*, but *gālli* 'calf'. Also noted was *ləŋəlli* (*ləŋəŋ* 'house'), in spite of *kidəŋli* (*kidəŋ* 'field').

(iii) *s* does not occur after *t*, *d* or *š*; instead of the first two combinations —*ss*— is found, and —*šš*— instead of the last as in 'awāssi ('awād 'silly'), *nāhāssi* (*nāhāt* 'chests'), *gərašši* (*gəraš* 'porcupines').

Finally we must deal with prominence. For the noun no general rules may be stated about the relation, in terms of prominence, between the singular and plural forms. It is not possible in general to predict the prominence pattern of the one from the other. In the case of the verb, however, once classification has been made into prominence types, the prominence of all the morphologically distinct forms may be stated with 100% regularity. Prominence has a function similar to, and complementary with, that of vowel quality—not only does it distinguish the two sets of tenses ('aspects'), but also verb classes. The classification of the verbs and the analysis of

the tense paradigms must thus be made jointly in terms of prominence and vowel quality. There are five types of prominence pattern (with combinations of these vis-a-vis the two 'aspects'). For three of them the prominent syllable is fixed, and is either one of the syllables of the stem, or the syllable constituted by the junction of stem and ending. For another the prominent syllable varies according to the morphological status of the form, though with complete predictability, and is always part of the ending. For yet another type, the position of the prominence varies according to the syllabic structure, such that if prominence is to be tied to any one element, it must be tied to the final consonant of the stem; the prominent syllable will be the syllable of which this consonant forms a part, and this may vary according to whether the ending begins with a consonant or a vowel, as in *tamúk^w* 'he tastes', but *támnrāk^w* 'you (sing.) taste' (stem *tam-*, syllable division CV/CVC and CVC/CVC respectively).

Prominence is a feature of the word in the sense that it is reasonable to determine one syllable, or none, as the prominent. But in the sentence there are complications, in that the prominent syllable (defined in terms of the word) is not always marked by pitch. At least three points may be made. First, a sentence-final prominent syllable has no feature to distinguish it from the final syllable of a word without prominence. This was a source of difficulty at first in research, since words in isolation naturally have sentence intonation. My informant insisted that *bata* 'dust' and *bótá* 'louse' were pronounced differently, yet his utterances of these words were identical. Once placed in a sentence frame, *nín bota/bótá gən* 'this is dust/a louse', the pitch of the final syllable of the word made the distinction clear. Secondly, the rhythmic pattern of Bilin is, so to speak, iambic or trochaic, in that the high pitch was often to be heard two or four syllables after the phonologically prominent syllable. This was especially true of verbal forms where the second or fourth syllable after the prominent syllable was the syllable that would have been prominent had the verb been a member of the class in which the prominent syllable is determined by the morphology of the form in question. For example, a high pitch was noted on the final syllables of *gáñrāri* 'she who runs' and *díñ^wastāritəl* 'towards it (fem.) being completed'; in the case of verbs in which the morphology determines the prominence, the prominent syllable is the final one (comparable forms of *gābna* 'refuse' are *gābrāri* and *gābāstāritəl*). Thirdly, emphasis may result in a difference in pitch as in *nawúk* 'all' where the first syllable may have high pitch if the word is emphasized, or *la gərwa* 'a man', which, with a high pitch on *la*, may be translated 'one man'.

A few remarks about typological relations between Bilin and Tigre and Tigrinya may now be made.

The consonant inventory is identical with that of these two Semitic languages except for,

(1) the absence of voiced and ejective alveolar affricates (sibilants) in Bilin,

(2) the absence of velar and labiovelar nasals, except in homorganic junction in the Semitic languages,

(3) the absence of labiovelars in Tigre.

The position with regard to the velar and labiovelar (not Tigre) voiceless and ejective consonants is a little complex. In Tigre they do not occur, in my experience, in affricate or fricative form—they are not 'spirantized'. In Tigrinya, as in Bilin, both voiceless velar fricatives and ejective uvular affricates, and similar labialized consonants, occur; these are often written \bar{k} , \bar{q} , \bar{k}^w , and \bar{q}^w . The ejective uvular affricates \bar{q} and \bar{q}^w are, as in Bilin, always in complementary distribution with the ejective velar plosives \bar{q} and \bar{q}^w , but the voiceless velar fricatives \bar{k} and \bar{k}^w are not generally in contrast with the plosives \bar{k} and \bar{k}^w ; yet the contrast is possible at least in certain plural forms of the noun; a pair is provided by *manaku* and *hasaku* (*hasaxu*), the plurals of *manka* 'spoon' and *hasaka* 'insect'.

A further point about the labiovelars is that in Tigrinya and other Semitic Ethiopian languages there is no contrast in terms of the independent labialization of a vowel and a consonant within the same syllable; there is no distinction between a velar plus a back vowel and a labiovelar plus a central (or back) vowel. In Bilin this contrast is not lost, as shown by 'änkük and 'arkwək (plurals of 'änkuká 'molar' and 'arkwi 'tooth').

The vowel system of Bilin is clearly that of the Semitic languages—seven vowels in all. In respect of the half open central vowel \bar{a} and its consonantal environment, Bilin lies halfway between Tigre and Tigrinya. For this vowel in Tigre is much closer in the environment of ' and \bar{h} , as in Bilin, whereas in Tigrinya the only open type vowel that may occur in a syllable containing any of the laryngeals is fully open and front, and phonemically identifiable with a . With the pharyngeal consonants ' and \bar{h} , on the other hand, the vowels differ in Tigre, not in quality but in duration; both \bar{a} and a are open and front, but \bar{a} is shorter in its duration (an excellent pair of examples is *hāl* 'maternal aunt' and *hal* 'maternal uncle', and there are many similar pairs in the verb system); there is no similar feature in Bilin—if \bar{a} and a are to be distinguished in this environment they can only be distinguished morphologically, but are phonemically identical, as in Tigrinya. There is no parallel in the Semitic languages to the greater openness of the vowel in the environment of the velar and labiovelar voiceless fricatives x and x^w (these are not found in Tigre); but in Tigre there is complete openness and frontness of the vowel not only, as already stated, with the two pharyngeal consonants, but also with the four ejectives \bar{t} , \bar{s} , \bar{c} and \bar{q} .

The syllabic system of Bilin is also very similar to that of Tigre and Tigrinya, with the one exception that in certain verbal forms an initial CCVC is possible in Tigre. The half close central vowel \bar{e} is, moreover, a syllable maker in these languages too, but its function is almost wholly determined phonologically, and does not depend to any large degree, as in Bilin, on morphological structure.

Prominence, as a lexically distinctive feature is wholly absent from the

two Semitic languages, but Tigre, unlike Tigrinya, has clearly recognizable prominent syllables, though these appear to be associated with the sentence rather than directly with the word.

The three points made concerning the function of the vowels in Bilin in relation to their morphology all find some parallel in the Semitic languages. For, first, Tigre has a quite striking system of vowel harmony. From a phonemic-morphemic point of view it differs entirely from that of Bilin in that in Bilin we are concerned with sequences of phonemes, whereas in Tigre the feature may be wholly stated in terms of allophones conditioned by a following vowel, and, moreover, in that it is in Tigre a feature of the whole language, not one single part of the morphology, as in Bilin. But this tends to disguise what is a striking typological similarity. For in Tigre, as in Bilin there are four types of harmony, again to be characterized as 'central', 'front', 'open' and 'back'. For the two central vowels *ə* and *ā* are more front when preceding *i* or *e*, and more back when preceding *u* or *o*; when preceding the open vowel *a*, the quality of *ā* is fully open and front (with an identical phonetic feature as that stated for the vowel in the environment of pharyngeals and ejectives). There are some features of this type of harmony in Tigrinya, but to a far less striking degree.

Secondly there is a correspondence of non-final *ā* with final *a* in Tigre in *sābra* 'he broke' and *sābrāyu* (with masc. sing. pronominal suffix) and of non-final *ə* with *i* in Tigrinya as in *kālbi* 'dog', *kālbəka* 'your (sing.) dog'; but note also, and compare the remarks on Bilin, 'arhi 'calf' but 'arhika 'your (sing.) calf'. Thirdly, there is, strangely enough, a complete reversal of the position concerning the vowel in prefix-stem junction in Tigrinya. For compared with Bilin 'ādāra and yadāra, we find Tigrinya 'abboy 'my father', but nābboy (prefix *nə-*).

Phonologically, at least, it will be seen that Bilin provides little information about a Cushitic substratum of the Ethiopian languages. The influence, if, indeed there is any need to speak of influence, is in the other direction. But from a purely descriptive point of view comparison of Bilin with Tigre and Tigrinya provides a striking example of 'affinité phonologique' (2).

(2) Some of the points made in this paper are illustrated in detail in previous papers, notably *The verb in Bilin*, "BSOAS", xix, 1, 1957, 131-59, *The noun in Bilin*, "BSOAS", xxi, 2, 1958, 376-91, and "Openness" in Tigre, "BSOAS", xviii, 3, 1955, 561-77.

Discussione sulla Comunicazione del prof. F. R. Palmer.

CERULLI. — Due parole soltanto per sottolineare ancora una volta come la linguistica camito-semitica è purtroppo un po' in arretrato rispetto a quella indo-europea. Metodi moderni e posizioni di problemi, che nel campo indo-europeo sono di normale uso, trovano ancora qualche vuoto o qualche resistenza tradizionale tra i Semitisti, i quali pure hanno forse, per la consistenza e struttura del camito-semitico, qualche buona occasione in più che gli indo-europeisti di applicare i criteri della moderna linguistica. Perciò io mi felicito vivamente nel vedere il collega Palmer applicarsi, nelle sue ricerche particolarmente delicate sulle linee di contatto tra cuscitico e semitico in Etiopia settentrionale, alla fonologia concepita ed attuata secondo i metodi più moderni.