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THE TABULATION OF TENSES IN A BANTU LANGUAGE¹

(BEMBA: NORTHERN RHODESIA)

J. C. SHARMAN

PART I: THE TABLES AND THEIR CONSTRUCTION

1. The material on which the present findings are based was collected during the period January 1950 to June 1951 near Kasama (Central Bemba) and the period July 1951 to June 1952 from Central Bemba informants in Lusaka, N. Rhodesia.

2. If we disregard all subject and object prefixes, locative suffixes, and the existence of high- and low-toned radicals (all of which affect tense signs, but only at a phonological and tonological level), we find that formally speaking the Bemba verb has at least 48 positive and 31 negative *single-word* main-sentence tenses. (Object and subject relative sentence and sub-relative sentence tenses also exist, but are essentially main-sentence tenses with regular tonal modifications.) In order to study and evaluate a verb of such complexity, it is necessary first to find some method of tabulation. There are two possible points of departure: form, and meaning. If we use the latter, we arrive at a matrix involving at least the categories of order (positive or negative), time, aspect, mood, and emphasis. But then we find that certain 'pigeon-holes' in the total table are filled by tense forms that also occur elsewhere, given the right context and the right radical. ('Radical' we may define as that element in a Bemba verb carrying that meaning which is independent of tense signs and prefixes and infixes.) It is convenient for demonstration and other purposes to construct our tables showing these dual- and triple-function forms occupying their complete range of pigeon-holes, even though this may mean a sacrifice of *formal* clarity. (It should be remembered, however, that even such compromise tables—in a 'mere' order-time-aspect-emphasis-mood matrix—can only expose basic meanings; the precise applications of some of the tenses are so subtle as to defy even five-dimensional tabulation.)

3. The semantic characteristics on which these tables are based are as follows:

1. In each pigeon-hole, the upper member is positive and the lower negative.
2. All on tables M, X and Y are indicatives. (See 3.12 below.)
3. All on tables S and Z are subjunctives, those on table Z referring to hypothetical events.
4. All on lines 1 refer to events in the remote past, (*a*) being untimed and (*b*) timed: i.e. if 15/16 are used, time cannot be specified.

¹ Much of the material used in this article was collected during field-work carried out when the author was a Scarbrough Research Student. He would therefore like to express his grateful thanks to H. M. Treasury and to the School of Oriental and African Studies, University of London: to the former for making the Scarbrough grant available,

and to the latter for accepting him as a research student. He would also like to thank Professor J. Firth, Professor M. Guthrie, and Dr. G. Atkins, to whom he is greatly indebted for his earlier training in Bantu linguistics, and Dr. A. E. Meussen, whose encouragement, suggestions, and criticism have been invaluable.

5. All on line 2 refer to recent events (i.e. earlier than today, but not yet regarded as *remote*).
6. All on line 3 refer to events earlier today.
7. All on line 4 refer to events in the immediate past (or immediate future: see below at 5.7).
8. All on lines 0 refer to events (*a*) at zero time (untimed) and (*b*) present (timed).
9. All on line 5 refer to events in the immediate future.
10. All on line 6 refer to events later today.
11. All on lines 7 refer to events tomorrow and onwards.
12. All on line 10 have no time reference of their own, but always apply to actual events *anterior* to some other event.
13. All on line 01 refer to supposed events in the past, or else to events supposed as consequent upon an event itself not yet accomplished, or, e.g., a wish not certain of fulfilment.
14. All on line 07 refer to events supposed in the future, or to events that are 'supposed to occur'.
15. All in columns 1 and 2 refer to simple events.
16. All in columns 3 and 4 refer to progressive events.
17. All in columns 5 and 6 refer to events of which the effects still persist at the time of speaking.
18. All in columns 7 and 8 refer to events considered from the point of inception or completion.
19. All in odd-numbered columns throw emphasis (if any) on what follows the verb, or, more precisely, are strongly linked to what follows (and formally therefore *cannot* stand at the end of a sentence).
20. All in even-numbered columns throw emphasis on the verb itself, or, more precisely, have only a weak link with what follows (and formally therefore may stand in mid-sentence *or* at sentence-end).

Additional:

21. Relative tenses can only be formed from odd-numbered (M) tenses, and line 07 tenses (by a systematic alteration of tone-pattern) and negative relatives from these by insertion of infix -*ji*-.
22. Rhetorical negative tenses can only be formed from table M and Y tenses.
23. Sub-relative tenses can only be drawn from even-numbered (M) tenses, and their negatives have pre-initial *ta*-.
24. Table S and table Z tenses have no special relative forms: table Y tenses have object relative forms.
25. All on tables Y and Z can never occur as complete sentences in themselves, i.e. they are always subordinate.

Notes

See 3.3. The difference between M and X and line 07 on the one hand, and S and line 01 on the other, is thus one of mood. This needs no further discussion, the term 'mood' being used in an entirely conventional sense, and subjunctive tenses in Bemba performing much the same functions as subjunctives in other languages.

See 3.5. The distinction 'recent—remote' has hitherto been formulated (if at all) as

TABLE I

	1	2	3	4
anterior 10	-sí- -la- No NEGATIVE	-a -a NONE	-síláa- -a No NEGATIVE	NONE

M

	SIMPLE		PROGRESSIVE		PERSISTIVE		INCEPTIVE	
	strong link	weak link	strong link	weak link	strong link	weak link	strong	
	1	2	3	4	5	6	7	
remote 1					-a -a P	-a P -a P	-a D -a D	
if timed (b)	-a ta- 'a-	-ile P -ile P	-alí- = 11	-ile D	-alée- ta- 'alée-	-a -a	-alée- ta- 'alée-	-a D -a D
recent 2	-á- ta- 'á-	-ile -ile	1-álli- 2-álli- ta- 'á-	-a -a D -ile D	-alée- ta- 'alée-	-a -a	-alée- ta- 'alée-	-a D -a D
earlier today 3	-áci- ta- 'áci-	-a -a	complex ta- 'áci-	-a D -a D	-áciláa- ta- 'áciláa-	-a -a	-áciláa- ta- 'áciláa-	-a D -a D
immediate 4	-á- as <i>past</i> , has no true negative: as future, see 51	-a -a	-áa- = 51	-a D				
zero 0	~ ta- '~	-a -a P	1 -la- 2 -la- = 01	-a -a D				'-laá- ta- 'laá-
if timed (b)				-léc- ta- 'leéc- (= P)	-a -a	-léc- ta- 'leéc- (= P)	-a D -a D	~ -ile P náa - '~ -a P ta- '~ -ile F = 05
immediate 5	-á- or use 53 ta- 'áa-	-a -e P	-áa- or use 54 = 51	-a D	-áláa- use 51 (but see 57/81)	-a	-áláa- -a D	-ákul ta- 'alée (= ta)
later today 6	use 03 use 51		use 04 = 51		compound compound		compound D compound D	
after today 7	-ka- ta- 'aka-	-a -e P	-ka- = 71	-a D	-kaláa- ta- 'akalée- (= P)	-a	-kaláa- ta- 'akalée- -a D	

Y

	1	2	3	4
suppositional 07	-íngá- compound	-a compound	-íngá- compound	-a D D
			-íngáláa- compound	-a D D

Z

hypothetical 01	a- '~ compound	-a P	a- 'láa- compound	-a compound	-a- 'láa- compound	-a D D
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S

	1	2	3	4		
zero 0	'~ -í-	-e F -a P	'leéc- (= F) -íláa-	-a -a	'leéc- -fláa-	-a D -a D
future 7	'-ka- -íka-	-e P -a P	'-kalée- -íkaláa-	-a -a	'-kalée- -íkaláa-	-a D -a D

TABLE I

	1	2	3	4
10	-sí- -la- No NEGATIVE	-a -a NONE	-síláa- -a No NEGATIVE	NONE

	SIMPLE		PROGRESSIVE		PERSISTIVE		INCEPTIVE & COMPLETIVE	
	strong link	weak link	strong link	weak link	strong link	weak link	strong link	weak link
	1	2	3	4	5	6	7	8
1					-a ta- 'a-	-a P -a P	-alí- -a D = 15	
2	-a- ta- 'a-	-ile P -ile P	-alí- = 11	-ile D	-alée- ta- 'alée-	-a -a	-alée- ta- 'alée-	-a D -a D
3	-á- ta- 'á-	-ile -ile	1-álii- 2-álii- ta- 'á-	-a -a D -ile D	-alée- ta- 'alée-	-a -a	-alée- ta- 'alée-	-a D -a D
4	-áci- ta- 'áci-	-a -a	complex ta- 'áci-	-a D	-áciláa- ta- 'áciláa-	-a -a	-áciláa- ta- 'áciláa-	-a D -a D
5	-á- as <i>past</i> , has no true negative: as future, see 51	-a -a	-áa- -a	-a D				
6	~ ta- '~	-a -a P	1 -la- 2 -la- = 01	-a -a D				'laá- -a (rhetorical positive) ta- 'laá- -a
7					-lé- ta- 'leé- (= P)	-a -a	-lé- ta- 'leé- -a D	
8								~ -ile P náa - '~ -a P ta- '~ -ile F = 05
9	-á- or use 53 ta- 'áa-	-a -e P	-áa- or use 54 = 51	-a D	-áláa- use 51 (but see 57/8 l)	-a -a	-áláa- -a D	-ákuláa- -a ta- 'alée- -a ta- 'alée- -a D (= ta- 'aalée- -a, cf. 53?)
10	use 03 use 51	use 04 = 51	compound compound	compound D compound D				
11	-ka- ta- 'aka-	-a -e P	-ka- -a D = 71		-kaláa- ta- 'akalée- (= P)	-a -a	-kaláa- ta- 'akalée- -a D	

	1	2	3	4
07	-íngá- compound	-a compound	-íngáa- compound	-a D compound D

01	a- '~ compound	-a P	a- 'láa- compound	-a compound	-a- 'láa- compound	-a D compound D
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	1	2	3	4		
0	'~ -í-	-e F -a P	'leé- (= F) -iláa-	-a -a	'leé- -fláa-	-a D -a D
7	'ka- -íka-	-e P -a P	'kalée- -ikaláa-	-a -a	'kalée- -ikaláa-	-a D -a D

'yesterday—before yesterday'. Very often, a 'recent' event will be discovered to have occurred yesterday, naturally enough: but the correct division is the vaguer one. The attitude of the speaker is the deciding factor, not the mechanical division of days.

See 3.8. The zero line containing 01/02 is really 'all-time', while that containing 05/06 is 'present'. Just as time cannot be specified with tenses 15/16, so with 05/06 when they are being used of events earlier than today. (If the forms 05/06 are used in their capacity as '35/36' or '45/46' we *can* specify time, however.) See below at 12.2.1.

See 3.13, 14, and 24. When followed by *nga*, tenses 011 and 013/014 are the past counterparts of 071/072 and 073/074 preceded by *nga*: both the former and the latter may, however, be used without *nga*, whereupon their English meanings appear to diverge. See special note on Table 3 (Part II).

See 3.18. It would be more proper to split the inceptive and completive aspects and use up the remaining digits 9 and 0 on another two columns. But it was felt better to leave them both under 7 and 8 for convenience of printing.

Also there is in Central Bemba a tense sign -Cí-, occurring only with the defective verb -LI and carrying the force of 'still' (e.g. *tucíli* . . . we are still . . .). This might be given yet another column, since it represents an aspect not mentioned hitherto. A previous observer has recorded -ací- as its past tense with -LI, and tenses -cílí- -a and -acílí- -a as present and past with normal verbs (e.g. *tucílibómbá*, we are still working); but these last three tenses are never heard outside River Luapula Bemba, in which area there may well be yet more aspects to be tabulated. (The present tabulation is for by far the most important dialect, and *only* for that dialect.) In any event, the -cílí- -a and -acílí- -a forms are better regarded as compounds, using -LI as 'auxiliary' followed by a main-verb stem with final -a; in exactly the same way as -Y- (go) and -IS- (come) are used as 'auxiliaries' plus main-verb stem in -a: in all cases, the vowel before the main-verb stem is lengthened.

See 3.21. There are two types of positive relative tense:

(a) That used when the head word of the clause is the subject of the clause: this type is formally characterized by low prefix tone;

(b) That used when the head word of the clause is the object of the clause: this type is formally characterized by high prefix tone and a final vowel in harmony with the prefix. (See 'The Representation of Structural Tones with special reference to the tonal behaviour of the Verb, in Bemba'¹ for Tonal Rules.)

4.1. Having performed our sorting by meanings, we find that, as it happens, many formal features have been associated with the lines and columns of the tables as set up, which provide us with ample confirmation of the proposed divisions. Some of the more striking are:

1. Every pigeon-hole on table M has a lower member with pre-initial *ta-*. Other tables have no *ta-* tenses.
2. *ta-* with following high tone occurs on lines 0, 1, 2, 3, 4. (See Table 1 for all structural tones.)
3. *ta-* with following low tone occurs on lines 5 and 7 (line 6 may be formally ignored as containing nothing but duplicates.)
4. *a.* Upper and lower members on lines 1, 2, 3 are both tonally and phonally similar.
 - b.* Except one (06), those on the zero lines are phonally but not tonally comparable.
 - c.* Those on lines 5 and 7 are neither tonally nor phonally comparable.

¹ *Africa*, xxv. 4, 1955, pp. 393-404.

5. Tenses only appearing in odd-numbered columns never occur at sentence-end (a purely formal characteristic, with semantic background noted at 3.19).
6. *a.* All tenses in columns 3, 4, 7, 8 on a line having a tense with final -e or -ile, themselves have a pre-radical containing -lee-.
- b.* All tenses in columns 3, 4, 7, 8 on a line containing only tenses with final -a, themselves have a pre-radical with -laa-.
- c.* All tenses in columns 3, 4, 7, 8 have final -a.
7. In every even-numbered pigeon-hole in table M, except 06 (which has a pre-initial náa-', and post-radical high), there is at least one tense with diatony.¹
8. Even-numbered tenses on lines 0, 1, 2, 3, 4 not having pre-initials, have one more mora in the pre-radical than do their odd-numbered counterparts.
9. All on lines 1 have low -a- in pre-radical.
10. All on lines 2, 3, 4 and those on 5 without ta- have high -a- in pre-radical.
11. All on line 3 have -aci- in pre-radical.
12. All on lines 0 have pre-radicals -la-, -laa-, -lee- (= -lae-), or no pre-radical.
13. All on lines 7 have -ka-.
14. Those on lines 5 and 7 with ta- have low -a- in pre-radical and either -e final, or -lee- in pre-radical in accordance with 6. *a* above.
15. Final -ile only occurs on lines 0, 1, and 2.
16. Final -e is restricted to ta- tenses in table M and to those not having -i- in pre-radical in table S.
17. The lower member tenses on line 0 of table S have low prefix.
18. We cannot finally determine the basic prefix tone of lower members of line 7 S, but nothing in the tonal rules precludes *low* prefix.
19. All other tenses in table S have high prefix.
20. Except for S 02, tenses in table S have high final² or post-radical high. (In tenses in columns 3 and 4, the high final or post-radical high turns up in the *pre*-radical -lee- or -laa-: cf. point 6 above.)
21. Lower members on lines 01 and 07 are compound tenses, those of line 01 being formed with either -BŪL- or -KÁan- but those on line 07 only with -KÁan- (cf. 3.13 and 3.14).
22. Tenses on line 01 have pre-prefixal a-.
23. Tenses on line 07 have pre-radical -inga-.
24. Tenses on line 10 have -ji- in pre-radical.
25. Tenses on line 10 have no single-word lower members.
26. Odd-numbered tenses with post-radical high or final high tones have no corresponding even-numbered form with similar tense signs plus diatony.
27. Diatony aside, there is tonal polarity between pre- and post-radical tense signs, except in the cases of pre-radical -ka- and -la-.
28. There are two more sets of tenses with tense signs identical with those in odd-numbered columns in tables M and Y, but with different tone-patterns; the corresponding lower members are tenses which have infix -fi-. (Otherwise same tense signs, same tones.)

¹ For an account of the rules governing diatony and a definition, see 'The Representation of Structural Tones . . . in Bemba', *Africa*, Oct. 1955. These tenses with diatony all have the further characteristic

that the pre-radical tense sign is a diphone or more.

² For the rules governing high final and a definition, see 'The Representation of Structural Tones'.

29. There is a set of tenses with tense signs identical with those in even-numbered columns in tables M and Y, but which may have different tone-patterns: the corresponding lower member has pre-initial ta-.
30. There is a set of tenses with tense signs and tones identical with those in table M and table Y, with pre-prefixal ta-.

4.2. There are also some general principles covering the whole table and serving further to link meaning and form:

- (i) Tenses with post-radical high tone have monophone or zero pre-radical tense signs *except the full futures* (71 neg.; S 71 pos. and neg.), and are odd-numbered except for 06.
- (ii) (a) Tenses with zero post-radical tone are odd (i.e. non-emphatic) except for S 02, 72.
- (b) All that are odd (non-emphatic) have a corresponding even (emphatic) member with diatony. (S 02 and 72 have corresponding odds with post-radical high.)
- (c) All that have diphone (or more) pre-radical tense signs have the same pre-radical tense signs in odd and even.
- (d) All that have monophone (or less) pre-radical tense signs have different pre-radical signs in odd and even.
- (e) Where there is no formal distinction between odd and even, the tense has either post-radical high or high final.

4.3. The only points on which *meaning* can be regarded as giving a different picture from *form* are these:

- (i) Formally, line 6 is not needed at all.
- (ii) Line 4 appears to be anomalous—tense 41 *apparently* has the same ta-member as a tense on one of the zero lines, yet its high -a- pre-radical tense sign would line very well with tense 53 (*but see below at 5.7*).
- (iii) Tense 05 (since it has a final -ile) *might* be assumed to be related to 11 and 21—this would necessitate exchanging the positions of the pairs 01/02 and 05/06.
- (iv) Tenses 07 and 57/58 might have been placed somewhere in columns 3 and 4, though there is nowhere very convenient to put them. In form, negative 57/58 would be regular as negative 53/54: in meaning this is very rarely true.

4.4. With these reservations, it would have been possible to sort the tenses into some similar arrangement of lines and columns using only formal data. The exact order of the lines could not have been completely determined: that of the pairs of columns is in any case immaterial.

5.1. The correspondence between certain broad categories of meaning and form is striking. For instance, points 4.1.2 and 4.1.3 now show that all indicative past negatives have ta- determining high following, and all futures have ta- with low following; 4.1.17, 21, and 25 show that non-indicative tenses form negatives without ta-: timed subjunctives in -i- (Table S), and tenses in some sense 'outside time' by compounds or not at all (lines 01, 07 and 10). 4.1.30 and 28 show that all indicative tenses except

X's form rhetorical negatives by simply prefixing *ta-* to the normal positives, with no change in tone pattern; and all odd-numbered indicatives except X's have relative forms bearing a systematic tonal relationship to the main-sentence forms. (Subjunctives have neither of these characteristics.)

5.2. Past negatives are identical in tones and phones with their corresponding positives; zero negatives are identical in phones but not in tones; future negatives are different in tones and phones.

5.3. Positive and negative progressives and inceptives with *-LEE-* pre-radical have corresponding simples or perfectives on the same line with final *-E* or *-ILE*. Positive and negative progressives, inceptives, and completives with *-LAA-* pre-radical have corresponding simples or perfectives on the same line with final *-A*. It appears that the 'finals' have 'got into' the pre-radical: the new suffix vowel of such tenses is (quite naturally) the 'neutral' *-A*. If this is accepted we can formulate simple rules covering the formation of negatives.

- (a) M Past negatives: pre-initial *ta'*, tense sign and final as positive odds.
- (b) M Zero negatives: pre-initial *ta'*, tense sign and final as positive odds, but post-radical high in place of zero post-radical tones and high final in place of post-radical high. (O>P and P>F.)
- (c) M Future negatives: pre-initial *ta'*, pre-tense sign *-A-*, tense sign as positive odd, final *-E*, post-radical high (P).
- (d) S Negatives: pre-tense sign *-Í-*, tense sign as positive odd, final *-A*: zero post-radical tones in place of post-radical high, post-radical high in place of high final. (P>O; F>P.)

(Note the symmetry between (b) and (d) as to tonal differences and between (c) and (d) as to signs. Where *-x-* is the tense sign, positive future has *-x-* *-A* (O), negative *-A-x-* *-E* (P): positive subjunctive has *-x-* *-E* (F), negative *-Í-x-* *-A* (P).)

We can define a tense in Bemba as a verb form having (a) prefix, (b) tense sign (which may be zero), (c) radical, (d) final (which may only very rarely be zero): hence for the verb *-TI*, tenses such as 01/02, 71, S 01, 011, &c., very rarely occur, because these tenses can have no (d) when the radical is simply *-TI*: but tenses such as 03, 73, S 03, 13, 57, &c. are common because they can have (d) (albeit in a pre-radical position!).

5.4. For Bemba, *zero* tenses have *zero*, *-la-* or *-la-* derivative pre-radical tense signs (*-la-+a>-laa-*: *-la-+e>-lee-*); and *-a*, *-e*, or *-ile* finals: these five may be regarded as basic, as they are in many other Bantu languages. 'Genuine' final *-A* occurs in 01/02, 41/42, 71/72, 15/16, 071, 011, 101, and 31; and all other *-A* tenses have merely refilled their suffix position with the central vowel. Even the *NAA-* of 06 is probably *NÁ-+A>NÁA-* (*-NA-* is a common enough Bantu past tense sign). *-E* characterizes subjunctives and negative futures. *-ILE* characterizes pasts. *-LA-* (*-LÁ-*) and *-LI-* (*-LÍ-*) are *even*-numbered tense formatives. The remaining signs are *-A-* (remote past), *-Á-* (recent, immediate), *-CÍ-* (or *-ÁCÍ-*) (earlier today), *-KA-* (future), and *-KU-* (or *-ÁKU-+F*) (inceptive).

5.5. Positive indicative tenses weakly linked with any following word (throwing emphasis on the verb) have, with one exception (06), the device of diatony. Even those negatives and subjunctives (col. 4) which are *capable* of taking diatony do so. This pairing of tenses has been noted in other Bantu languages (though usually only in those cases where the members of pairs are phonally different: where differences in tones *have* been noticed, they have often been put down as 'intonation' differences). The clear case offered by Bemba, where *every* 'non-emphatic' tense has an 'emphatic' tense to correspond, should prove useful in the evaluation of these other cases hitherto not satisfactorily accounted for.¹

5.6. Progressive and inceptive and completive tenses seem to be historically later than simple or persisting—the evidence of point 4.1.6 suggests this. By the same token, diatony seems later than post-radical high or high final: this conclusion is further supported by points 4.1.26 and 4.1.27. Zero tenses 01/02, 05, and S 01 must be among the earliest of all: -áci- -a must be very late, since, of those that could have, it alone has no even-numbered mate. (This last is confirmed geographically: -áci- -a is spreading from the west; there are still some areas that do not use it.)

5.7. It is likely that there was formerly no distinction whatever between immediate past and immediate future (this is still true in many other Bantu languages, I believe): there is sometimes still no formal distinction in Bemba as far as simple events are concerned (41/42 appears again at 51/52). For example, na-áa-is-a+D>naáisá 'I have just come' can also mean 'I am just about to come': na-á-tamp-a úku-ímb-a>naatámpa úkwimbá means 'I am about to begin singing'. Furthermore, as we have seen, negative 51 is a perfectly regular negative of 41, *assuming 41 is being used as a future tense*: and the tense normally cited as the negative of 41/42 (past), i.e. neg. 05, is *not* their true negative, since it does not involve 'immediacy'. We may assume that there may have been a 43/44 identical with 53/54, and that they were progressive *only*. Now, however, 53/54 *cannot* be used as 'immediate past progressive' and are taking over the duties of 41/42 as future *simple*: so it becomes necessary to have two separate lines 4 and 5.

5.8. The existence among the even-numbered tenses of sub-types having separate functions is of interest (e.g. 22 and 02); one difference between 22.1 and 22.2 occurs in hypothetical sentences when 22.1 is used for an hypothetical event in the recent past (which may be yesterday = mailo) and 22.2 for one in the future (which may be tomorrow = mailo). These sub-types are not sufficiently different in functions to warrant a completely new column: but they do warrant an extra reference number.

6.1. The success of this method of tabulation is clear: and in teaching and discussion the systematic numbering is extremely useful. If someone says '(Bemba) tense 16', we know immediately that he means 'a main-sentence positive indicative tense referring to a fully past (i.e. not "recent" past) event or action, of which the effects still persist or matter, with emphasis on the verb, or weak link with following word,

¹ The dichotomy may manifest itself as 'inclusive \Leftrightarrow exclusive' rather than 'non-emphatic \Leftrightarrow emphatic': but behind both there lies (at a more truly grammatical level) 'strongly-linked/weakly-linked'. The author has personally observed similar

'pairing' with either diatony or post-radical high in Lozi, N.R. Tonga, Shona, and even in Nyanja/Mang'anja.

hence capable of being used at sentence-end'. We shall have more to say about this in the conclusion to Part II.

As noted in 2 above, in this tabulation certain tenses are allowed to appear in two or more divisions of the table. In Part II we shall discuss the reasons for this; and finally, we shall give illustrations of the usage of certain tenses.

PART II: RADICALS AND THE SELECTION OF TENSES: ILLUSTRATIONS

In Part I we discussed the tabulation itself, the principles involved, and the relationship between meaning and form. Here we shall be concerned with the various factors influencing the selection of tense forms and the meanings that can be applied to them; illustrations of the uses of certain tenses will be given.

7.1. There are some tense signs which occur with identical form in more than one division of the tabulation: these provide us with a clue enabling us to divide radicals into two main types; or, more properly, because radicals are of two main types, certain tense signs vary in apparent meaning according to the radical with which they are used.

7.2. For example, one type of radical uses the 03/04 forms in their 'present progressive' sense, while another type uses the same *forms* in a 'simple event later to-day' sense; these latter have been allocated their appropriate pigeon-hole at 61/62. These two types of radical are here and elsewhere called type B and type A respectively. (For examples, see 'Key to Table 3' below.)

7.3. Type A radicals are those expressing an instantaneous action or event (e.g. 'smash'), while type B express an action or event capable of taking some time to occur (e.g. 'read'). Hence type A only uses the 03/04 (present progressive) forms when a *series* of actions or events is involved ('I am smashing bottles'). A *single* type A action or event, being instantaneous, is always *either* past *or* future at the time one speaks of it, and so 41/42 are used.

7.4. Type A *seems* to subdivide into radicals for which tenses 05/06 are used for events or acts which have been completed, but which have persisting effects, and radicals for which 05/06 are used for acts which are apparently *still going on* (not in the sense that the effects persist). This is really due to translation breakdown, and in fact meanings can always be found for radicals of the latter type to bring them into line with the former; but in, say, English, we cannot incorporate such artificial-sounding meanings in natural sentences. A typical case is that of -SEND-, usually translated as 'carry', which gives rise to the following: one asks, 'What are they doing?' (using 03 of -CÍT-, do) and the reply is: 'Náabásendá ínkuni', 'They *are carrying* wood'. The solution is that -SEND- does not mean 'carry' but 'lift-to-carry'; they lifted the wood some time ago within 'this zero', and the effects of their having lifted still persist.

7.5. Another (more valid) mode of subdividing type A already foreshadowed is into *action* and *event* radicals: certain of the latter might be called *state* radicals, from the fact that 15/16 are used with such radicals to describe permanent states; (it should

be noted also that these types normally take no object and can be separated out on this ground as well: they may be described as 'neutral'); the remainder will use 15/16 to cover irreversible *acts* or will not take kindly to 15/16 at all. They will, however, use 01/02 for habitual actions, whereas the state radicals will naturally tend to avoid 01/02. It is *possible* for *almost* all radicals to appear in every tense, however.

Time Units

8.1.1. In the tables in Part I and here, time has been divided in terms of 'remote, recent, earlier today, now or zero, later today, tomorrow and onwards'. In fact, these categories are in a sense simplifications.

8.1.2. First, it must be noted that, if we think in terms of weeks, then 'last week' will use 'recent' tenses, and 'the week-before-last' will use 'remote' tenses. Similarly with months and years as our time units.

8.2.1. Again, the extended 'now' may cover the present five minutes ('I am writing a letter'), five days ('We are building a house'), or five years ('I am working for Bwana Smith').

8.2.2. Similarly, a persistive event of sufficient importance will also cause a reassessment of what is 'zero'. For example, if A has moved to a new village, or gone to the line of rail, he may treat events that have occurred since ('within') the move as zero-time events. The event of moving has created a larger 'now', though other events not directly connected with the move may themselves be allocated tenses working outwards from a more 'normal' (restricted) zero. X meets Y and says, 'Where is your bicycle?' Y replies, 'Náabééba', 'Someone has stolen it', using a tense (06) which most often refers to 'a zero extending to earlier today, effects persisting till now'; but he may easily be referring in this case to a point in time several weeks back: the event is of such importance that it extends the 'zero' backwards in time and the man therefore uses tense 06 (rather than 16, which we might have expected if we had not observed the extensibility of 'zero', both for progressives (obvious enough) and persistives (not so obvious)).

8.3. A further important factor affecting choice of tenses is the presence or absence of a 'timing' word or phrase in the sentence. For example, even though such radicals as -FŴ- (die) and -PŶ- (burn) are by their nature 'persistive' in meaning, they nevertheless behave like any other radicals in using 15/16 of past events only if no specific time is mentioned: if a time is mentioned, they use 11/12 for fully past events, even though the effects obviously persist. Timing is in fact irrelevant, hence impossible, in the case of 15/16; the event is past, and persistive—irrevocable: but the siting of an event in the time-stream implies other 'times' in which the situation was different or will be different, in contrast to which the speaker is focusing attention on a particular time, at which an event occurred, whether persistive in *character* or not.

9.1. Thus the Bemba tenses fit to a pattern 'evoked' by the importance of the event and the total meaning of the word in its particular linguistic and physical

context; this pattern may be formalized into the general pattern of time reference and aspect shown in the tables.

10.1. Before proceeding to our illustrations, let us summarize the more salient features of interest in Bemba tenses:

- (i) There is a remarkable relationship between meaning and form: the association of the forms of the negative with both grammatical and semantic subdivisions is especially noteworthy.
- (ii) The categories of time reference and aspect are familiar: but Bemba tenses are capable of indicating emphasis as well. This is strongly associated in Bemba with the formal feature of presence or absence of diatony,¹ as with the ability of only one of the two types of main-sentence tenses to form relative tenses.
- (iii) Final -e appears only in the simple and perfective tenses (in the latter in the -ile suffix) and in future negatives. It is associated in parallel progressive and inceptive tenses with pre-radical -lee-, whereas final -a is associated with pre-radical -laa-: the basic forms involved are: pre-radical zero, pre-radical -la-, final -a, final -e, and final -ile. Tenses 01/02 (zero simple) are the 'simplest', both in meaning and in form.

11.1. Bemba is a lucky example of a language with a remarkably systematic correspondence between form and meaning; there are very nearly as many forms as there are basic meanings, and thus the full skeleton of the table is made apparent. Certain characteristics are common to many Bantu languages: the division of time into remote, recent (often equalling yesterday, of course), earlier today, just now (past and future), zero and present, later today, and tomorrow and onwards;² the division of aspects into simple, progressive, persistent (perfective), inceptive, and complete; the division of tenses having identical time-reference and aspect into non-linked and linked (more simply, emphatic and non-emphatic, or, in some languages, exclusive and non-exclusive); the broad division into indicative and subjunctive, the latter having only two or perhaps three time-references; subdivisions for tenses outside time; the possibility of forming relative tenses from one set of columns by systematically changing the tone pattern. Bantuists have widely adopted the class-numbering system for nouns: a tense-plus-aspect numbering system for verbs would greatly facilitate interchange of ideas and discoveries. Not all languages would have as many divisions as Bemba; some would have extra divisions; but the present lines 0-7 and columns 1-8 (a few languages may have even numbers only) seem common enough to act as a standard.³ The general acceptance of the division of radicals into (at least) types A and B for 'instantaneous' and 'process' might also be of value. The author would greatly welcome criticism and suggestions.

11.2. The systematic tabulation here outlined has proved of value in simplifying field research: for instance, the attack on verbal auxiliaries is made much easier; since there are in Bemba some fifteen auxiliaries, each capable of occurring in some

¹ See 'The Representation of Structural Tones ... in Bemba, N.R.'

² 'near' and 'distant' in some languages.

³ Since writing this article, the author has used

this framework with success on other languages. The odd-even distinction has proved particularly valuable in speeding up the analysis of tonal systems.

or all of the single-word tenses, the saving in time and headaches effected by this technique is considerable. The pattern of the relationship between auxiliary, main verb, and total 'meaning' is immediately made clear in a table having this framework :

TABLE FOR AUXILIARY -xyz-

		main-verb tense →				
		o1	o2	o3	o4	&c.
auxiliary tense ↓	o1	simple habit (strong link)	simple habit (weak link)	'always' continuous (strong link)	'always' continuous (weak link)	
	o2	Nil	Nil	Nil	Nil	
	o3	series habit (strong link)	series habit (weak link)	'on and off' continuous (strong link)	'on and off' continuous (weak link)	
	o4	certain to . . . (o3/o1)	certain to . . . (o3/o2)	Nil	Nil	
	&c.					

Notes: This table is not intended to represent the behaviour of any existing Bemba auxiliary and meanings quoted do not actually apply to any *one* existing auxiliary: they merely serve to illustrate the use of this type of table. The observer will of course invent his generalized 'meaning' terminology to suit himself and the language under investigation. It must be realized that it is normally unnecessary to construct *all* columns and lines of the table, as it quickly becomes apparent which auxiliary and main-verb tense types 'chime' together. But such a table is invaluable as a 'checker' (to make sure that all possible forms are recorded, and that meanings are confirmed as fresh material comes in), as an 'analyser' (to discover the characteristic effects of the auxiliary), and as a permanent synoptic record. The same *structural* technique can be applied to a series of record cards.

It is possible for the investigator using this type of tabular representation to become aware of the meanings of such tenses while remaining unable to translate them adequately into his own language.

11.3. Another advantage is that the method is self-confirmatory: a comparison of paragraphs 3 and 4 is convincing. Previous assessments of the Bemba verb failed because data were incorrect and/or wrongly interpreted: a tabular representation of this type shows up such faults as internal contradictions (i.e. self-contradictions within the framework of the table), and, equally important, shows up its *own* faults by not agreeing with the facts as they come in, so that it can by degrees be made more accurate.¹

¹ Since this article went to press, another group of single-word tenses has come to light. Formally, they can be constructed by merely inserting -ku- after the pre-radical signs of tenses M and S o3/o4 and 73/74, M 13/14 and 57/58. They seem to have the same meanings as their more normal fellows: there may also be some idea of impatient, grudging agreement, at any rate for the futures. Note that they all contain

-LEE- or -LAA- signs: from the point of view of tabulation, they simply add yet one more 'dimension' to tables M and S. They are said by informants to be 'old' Bemba: it is interesting to note that 33/34 (already suspected of being 'new') will not accept the -ku-. The whole nexus adds force to the idea that the sign -la- was once a verb in its own right.

APPENDIX : EXAMPLES OF THE USE OF TENSES IN BEMBA

(The spelling here adopted is near-phonological : double vowels are long, *all* vowels before nasal compounds are long, and high tones are marked by acute accents.)

12.1. It is not proposed here to study the detailed applications of all the single-word tenses : but a few examples may serve to illustrate the foregoing.

The differences between the *lines* on Tables M and S are self-evident ; points which may, however, need illustration are :

- (1) differences between 'odds' and 'evens'.
- (2) differences between aspects.

12.1.1. 01/02 (a) Bu[́]fé mulapeepa? (02) Do you smoke?

(b) Ee tupeepa (01) sekeleéti Yes, we smoke cigarettes.

(i.e. we smoke *cigarettes*, not a pipe.) Contrast :

(c) Bá[́]mó bá[́]lalyá (02) ínsoka Some people actually *eat* snakes.

(Note. There is no other difference in meaning between these two tenses : this applies throughout the whole range of odd-even pairs ; the difference is *always and only* one of strength of link (= emphasis) and *never* of aspect or time.)

12.1.2. 41/42 (a) Nga mwaatóbá (42) úmutóndó bá[́]lééisaafúlwá If you *break* the pot they will be angry (weak link).

(b) Nga mwaatóba (41) úmutóndó twáákuláatápíla múnsupa If you break the pot we shall (have to) use a calabash for drawing water (strong link).

(These examples clearly demonstrate the difference in emphasis ; a previous observer thought that the difference between 41 and 42 after nga (if) was one of 'likeliness' and 'unlikeliness', but this was probably due to faulty tone-reproduction, diatony in 42 being overemphasized, and hence interpreted by the informant as second degree tone-range.)

12.1.3. 71/72 (a) X : Ná[́]límó tabaakafikéko.

Y : Íoó, abééna-Mpangé bá[́]kéésaabáséndela ifí[́]pé.

X : Óoo, lyééná bá[́]káfíká (72).

(a) X : Perhaps they won't get there.

Y : Oh, I don't know, Mpange's people are going to carry their things for them.

X : Oh, in that case they will get there.

(b) X : Mulééti bá[́]káfíka mailo? (71)

X : Do you think they'll arrive tomorrow?

(If the speaker X had been talking about 'us' instead of 'them', there would have been no audible distinction between 71 'tukafíka' and 72 'tukafíka', since diatony consists in a raising of all tones after the *last* structural high : as there is no structural high in tukafíka, the difference cannot be made ; but 71 and 72 are just as clearly distinguishable under the right *tonal* conditions as, say, 05 and 06, which are different in phones as well as tones.)

The foregoing examples should suffice to make clear the odd-even distinction. Now we come to the four aspects.

12.2.1. *Simple and Persisting (Perfective)*

(a) *Simple*: Ímbwa fílyá iinámá (01) Dogs eat meat (as a habit, i.e. when they eat, one of the things they eat is meat).

Perfective: Ímbwa jáakwáátá ímiclá (15) Dogs have tails (as a characteristic, i.e. they got them a long time ago and the effect of their having got them still persists).

(b) *Simple*: Twaacífika úlucéelo (31) We arrived this morning (and are perhaps no longer in the place in question, or at any rate do not regard it as of any relevance to the present discussion).

Perfective: Tufikilé úlucéelo (05) We arrived (this) morning (and are still here).

12.2.2. *Progressive*

Báléímba kalundwé (03) They are digging cassava (the action is taking some time to perform).

Báléésenda ícaaní (03) They are carrying grass (in a series of journeys).

Contrast this with the example (náabásendá ínkuni) given in 7.4 above. As noted in 7 the progressive form often has a 'simple event later today' meaning when used with type A radicals.

Nálímó báléeláálá (04) (being used as 62) Perhaps they'll stay the night (will sleep). 'They are sleeping', is, of course, náabáláálá: they got to sleep some time ago and the effect still persists.

12.2.3. *Inceptive and Completive*

Inceptive: Mwáákuláábómbá umúlímó uyú mpáka ákasúbá káwe (57) You will work at this job until sunset (today).

The implication is of a series of inceptions: Mwáákuláatápíla múmátépé ayá, with no time limit stated, would imply 'starting from now, whenever you draw water from now on, you will use these debbies': again a series of events, considered from the standpoint of their inception.

Completive: Niwé-wafúndaula ámeenjí kúci sífíma

Leeló kúci sífíma nlaayá-ko?! (07)

You (it is you who) muddied the water at the well.

Me? Have I been there yet?! (in other words, I haven't been there yet!).

This tense has so far been noted only in rhetorical positive¹ sentences; if one

¹ Rhetorical *negatives* may be regarded as being formed directly from the normal positive tenses on Table M and line 07 by the simple addition of the pre-initial (non-determinant) ta-. There is no disturbance of the positive tone pattern. Thus we have:

Bujé náabáfíká? (06) Have they come?

Tanáabáfíká?! (rhet. neg. 06) Have they not?!
(The normal negative of 'náabáfíká' would be 'ta-

báfíkilé' (neg. 06).

The only special case of a rhetorical positive recorded is in tense 07. This can be regarded as being formed from the negative by the simple *removal* of the pre-initial ta- with no alteration in tone pattern. (The reverse process to that of forming rhetorical negatives.)

considers its meaning, this is not surprising. The negative form has been well known ever since Bemba was first investigated:

Mwáápwa? Ááwe, mukwái, tatúlaapwá (07 neg.) Have you finished? No, we haven't finished *yet*.

13. These and other usages may be diagrammatically represented (see p. 43):

Notes on Table 3

(1) KEY: Type A radicals (a) ● instantaneous event or action.
(b) ○○○ series of such events.

Type B radicals (a) - - - event or action in progress.
(b) — such event regarded as a whole (effectively equivalent to a single event).

e.g. A (a) naatóba icílolá (41) I have broken the mirror.
(b) ndéetoba amábótóló (series 03) I am breaking bottles.

B (a) ndéésoma icítábó (03) I am reading a book.
(b) naasóma icítábó (41) I have read the book.

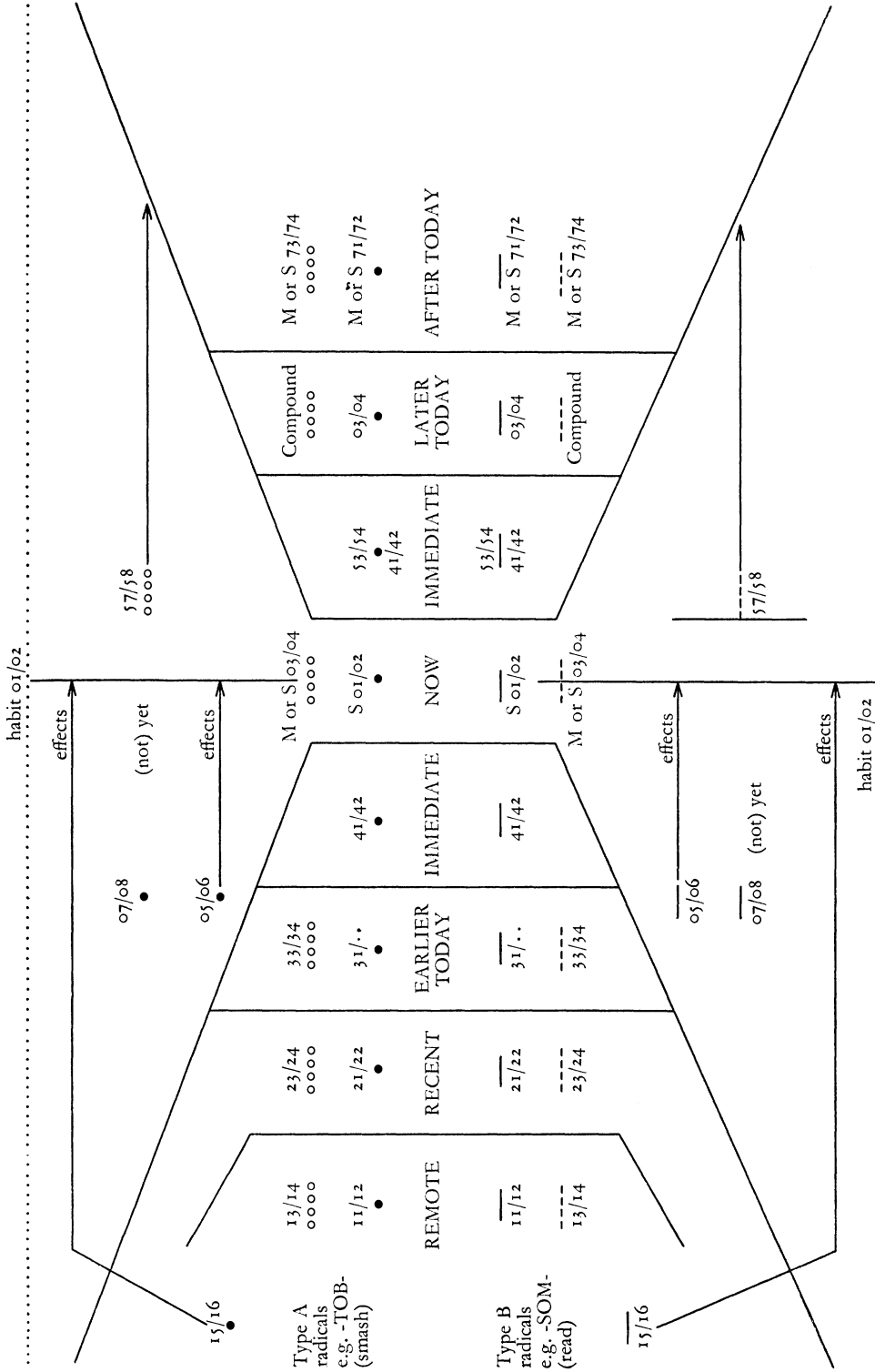
(2) OMISSIONS: Tenses 'outside time'.

(a) The hypothetical and suppositional tenses 011, 013/014, 071/072, 073/074, are best thought of as being 'outside time'. Compare M 01/02, which are 'in time' in that they refer to any and all time: e.g. kalé tulasoma (02) ámabúúku—we have been (in the habit of) reading for a long time—whereas 011 and 013/014 are 'outside time' in that they refer to events that are merely *supposed* in the past. They belong to the 'past impossible' when followed by nga, and to any time when *not* followed by nga: in both cases they take on the time-reference of the tense used in the main clause. For example, after hypothetical past tenses in the sub-clause, the main clause (introduced by nga) always carries the *past* tense applicable to the time and aspect that the event *would* have had if it had occurred; and instead of main clause *future* tenses, 41/42 are used for 'later today' and 22 (with a changed tone-pattern) for 'tomorrow and onwards'.

e.g. (i) amúbá kúnó, nga cáalíwéémé
had you been here, it would have been nice (long ago).
(ii) amúbá kúnó, nga náacíwaamá
if you were here, it would be nice (now).
(iii) amúfiká lucéélócééló, nga twaayá icúngúló
had you arrived early this morning, we could have gone this evening (later today).
(iv) amúfiká lucéélócééló, nga twaalíyá máíló (or twaalíya mailo)
had you arrived early in the morning, we could have gone tomorrow/yesterday.
(v) múkeekálé máíló, atúlandá
you ought to stay tomorrow, and then we could talk (i.e. so that it would be possible for us to talk).

(b) The future suppositional tenses 071/072, 073/074 have also been omitted. They also may be regarded as timeless, though they normally refer to an event which, if it were to occur at all, would be in the future. (*Any* future, not necessarily the *full* future.)

e.g. (i) ébeengéésá
those are the people who should come/are supposed to come.
(ii) jímwíingálééta tíí!
you might bring some tea!



- (iii) nga mwaayá kútáúni, mwiingáyaanfitilakó úmunání
if you go to town, would you mind buying some meat for me?
- (iv) ndééfwaaya umúntú úwingééjiba ukúfimba icílófi
I want a man who can (i.e. who will turn out to be able to) do Barotse thatching.
- (v) nga twiingáya kú-Ndólá, kúti twaayáabákumányá
if we were to go to Ndola, we should meet them.

(c) The narrative tenses X 101 and X 103 occur only in narrative: often, therefore, they appear in a context of 'pastness', but even if the narrator is telling a fanciful narrative of the future, he will make use of these tenses, normally in speaking of an event anterior to another. They have been omitted from Table 3 since they too are outside time and would fit in anywhere.

Let us note once more that (a) 011, 013/014 and (b) 071/072, 073/074 have *compound* negatives; and that (c) 101, 103 have *no* negatives: whereas all tenses clearly 'in time', i.e. all those on Table 3, have *single-word* negatives (in ta- for indicatives, -ji- for relatives, and -i- for subjunctives).

Résumé

TABLEAUX DES TEMPS DU VERBE¹ DANS UNE LANGUE BANTOUE

I

POUR faciliter la référence, il est utile de classer les temps verbaux de la langue bamba sous forme d'un tableau. Les lignes du tableau représentent les temps passé, zéro, futur, etc., tandis que les colonnes indiquent l'aspect (simple, progressif, perfectif, etc.). Chaque ligne et chaque colonne est numérotée. Les colonnes impaires renferment les 'temps' ayant un lien grammatical fort avec ce qui suit, tandis que les colonnes paires renferment les 'temps' ayant un lien faible ou nul avec ce qui suit. Les formes négatives sont placées immédiatement au-dessous de la forme affirmative correspondante, mais dans la même case. Des tableaux séparés sont nécessaires pour les indicatifs et les subjunctifs.

Lorsque nous faisons le classement de cette façon (c'est-à-dire, d'après la valeur sémantique), nous constatons que nous avons réalisé, en même temps, une répartition rationnelle des caractéristiques *formelles*. Parmi les associations les plus frappantes entre la signification et la forme on constate que:

- (i) Les indicatifs ont des formes négatives comportant le préfixe TA- (TA-' pour le passé, TA-' avec d'autres modifications tonales pour le temps zéro, et TA-' pour le futur).
- (ii) Les subjunctifs ayant un rapport avec le temps ont des négatifs formés avec l'infixe -í-.
- (iii) Les suppositifs et les hypothétiques (en dehors du temps) ont des négatifs composés dans lesquels sont employés les 'temps' positifs de -KÁan- (refuser) ou -BŪL- (manquer) plus le radical du verbe principal.
- (iv) Tous les indicatifs ayant un rapport avec le temps forment des négatifs rhétoriques simplement en ajoutant le préfixe TA-, sans aucune modification tonale (aucun autre 'temps' ne forme des négatifs rhétoriques).
- (v) Des indicatifs impairs, ayant un rapport avec le temps, deviennent relatifs à la suite d'une modification tonale systématique.
- (vi) Les 'temps' pairs, avec seule exception, sont caractérisés par la diatonie, mais jamais les 'temps' impairs; la diatonie est donc associée à des liens grammaticaux, faibles ou nuls, avec ce qui suit.

¹ Les temps du verbe sont représentés par 'temps' avec guillemets.

- (vii) Tous les 'temps' dans les colonnes 3, 4, 7, et 8 sur une ligne ayant un 'temps' avec -E final ou *-ILE final, ont eux-mêmes un signe de 'temps' pré-radical -LEE-, tandis que ceux dans les colonnes 3, 4, 7, et 8 sur une ligne comprenant uniquement des 'temps' avec -A final, ont eux-mêmes un signe de 'temps' pré-radical -LAA-. Les signes finals se sont introduits dans les pré-radicaux: -LA-+-E > -LEE- et -LA-+-A > -LAA-.

D'après ces faits, et d'autres preuves encore, nous constatons qu'il existe un rapport très étroit entre la signification et la forme; cette constatation est non seulement intéressante par elle-même, mais elle sert, en outre, à confirmer la classification. Nous sommes également en mesure de tirer quelques conclusions au sujet de l'évolution historique du système des 'temps' de la langue bemba.

II

Les radicaux des verbes se divisent en deux types principaux: ceux qui ont trait à des actions ou des événements instantanés (Type A), et ceux qui ont trait à des événements ou des actions qui nécessitent du temps pour se produire (Type B). Ces deux catégories sémantiques influent, tant sur le choix des 'temps' que sur leur signification. On indique les temps — reculé, récent, immédiat ou zéro — selon la façon de penser de celui qui parle et pas selon une division purement machinale du temps. La présence d'un mot ou d'une phrase qui indique le temps influe également sur le choix des 'temps'. On doit tenir compte de tous ces facteurs lorsqu'on examine les significations.

Le classement révèle certaines catégories fondamentales qui sont communes à plusieurs langues bantoues, par exemple, des indications de temps et des aspects similaires, ainsi que le phénomène des 'temps' à liens forts/faibles. L'auteur est d'avis qu'un système normalisé de numérotage de 'temps+aspect' (cf. le numérotage normalisé des classes de substantifs dont l'usage est très répandu) faciliterait énormément l'échange d'idées et de renseignements. Il a utilisé le cadre dont il s'agit avec succès pour l'analyse d'autres langues; la dichotomie pair/impair (lien fort/faible) s'est avérée particulièrement utile, et le système de numérotage a facilité l'examen des 'temps' auxiliaires.

La méthode se vérifie automatiquement: tout défaut de classement se révèle par des contradictions internes.

LA REPRÉSENTATION TONALE EN BEMBA (RHODÉSIE DU NORD), EN PARTICULIER DANS LE DOMAINE DU VERBE¹

ON désigne une forme phonétique/tonétique comme la *réalisation* d'une forme phonologique/tonologique. Dans cet article, une forme phonologique est appelée la *représentation* d'une forme structurale, et l'article a trait aux rapports qui existent entre les niveaux structurel et phonologique.

Les règles fondamentales sont les suivantes :

- I. Le ton haut (H) se double sur un ton bas (B) suivant, si celui-ci est suivi d'un deuxième ton bas.
- II. BH en contraction suit la règle I, la voyelle longue résultante étant représentée en contraste tonal avec l'élément msuivant (HB en contraction suit simplement la règle I).
- III. Un préfixe monophone (i-, a-, u-, n-) qui ne subit pas de contraction suit la règle I, et il est lui-même représenté en contraste tonal avec l'élément suivant (un préfixe monophone qui subit une contraction suit simplement les règles I et II).

¹ Voir *Africa*, xxv. 4, pp. 393-404. Le résumé pp. 403-4 doit être remplacé par celui qui suit.

Cependant, il existe, en plus de ces règles fondamentales, diverses mélodies 'imposées' et tons 'imposés', qui donnent naissance à des règles supplémentaires.

1. La diatonie — le redoublement du dernier ton haut structurel sur toutes les syllabes suivantes du mot (règles IVa, IVb, et V).
2. Ton haut des syllabes postradicales.
3. Ton haut final — la dernière syllabe est à ton haut et est séparée du préfixe par au moins une syllabe à ton bas (2.2.3). Dès qu'il y a un élément entre le préfixe et le radical, le ton haut final est remplacé par le ton haut des syllabes postradicales (règle VI).
4. Ton final élevé — aux formes relatives ayant un préfixe à ton haut, la dernière syllabe reçoit également un ton haut; dans certaines circonstances (règle VII), ce ton final élevé n'est pas représenté.
5. Schémas tonaux du subjonctif — une séquence HBH, dans laquelle le ton haut final est étendu à toutes les postradicales si la règle VIa doit s'appliquer, et une séquence BHB, dans laquelle le ton bas final est étendu à toutes les postradicales. Le ton bas de HBH peut être remplacé par un redoublement du ton haut précédent dans certaines circonstances (règle VIIIa); dans deux formes verbales, la marque *-ka-* n'accepte pas ce redoublement (règle VIIIb).
6. Contraste tonal — à l'impératif simple, la syllabe postradicale a un ton opposé à celui du radical. Il y a cependant des règles spéciales pour l'impératif.
7. Préfixe à ton bas — dans les formes relatives subjectives (. . . *qui* . . .) et dans quelques autres formes, tous les préfixes sont à ton bas (le ton inhérent du préfixe n'est pas maintenu) (règle IX).
8. Déterminants — des éléments pré-initiaux qui déterminent le ton de la syllabe qui les suit.

Des radicaux à voyelle longue ou des équivalents de ces radicaux influencent, s'ils présentent une suite HB, la représentation d'un ton haut final, d'un ton final élevé et des tons hauts postradicaux dans certaines conditions (règle X).

Les indications suivantes peuvent être utiles lors de l'étude tonale d'autres langues bantoues:

Il y a lieu de distinguer entre préfixes monophones et préfixes diphones.

Il importe de diviser les phénomènes tonaux imposés en divers types, dont la diatonie, le ton haut postradical, le ton haut de la partie postradicale, le ton haut final, le ton final élevé. (La diatonie est associée à une liaison faible ou à l'absence de liaison avec le ou les mots suivants, et joue un rôle d'une importance primordiale dans la description d'un système verbal.)

La distinction entre le ton haut des postradicales, le ton haut final et le ton final élevé requiert une attention particulière; en effet, ces tons prêtent facilement à confusion, surtout si le radical n'est suivi que d'une seule syllabe.

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CORRIGENDUM

REPRESENTATION OF STRUCTURAL TONES . . . IN BEMBA (see *Africa*, xxv, 4, 1955, p. 395)

III. Monophones not subject to contraction obey Rule I, the prefix itself being represented in tonal contrast to the following element, *in cases of 1st and 2nd persons in object relative tenses and Class 1 generally*. (Monophones subject to contraction simply obey Rule II.)

The author regrets that the words in italics were omitted from his typescript.