

SOUND CHANGES IN THE GORONTALO LANGUAGE

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1. INTRODUCTION

The Gorontalo language (G) is spoken in the town of Gorontalo and its environs on the northernmost peninsula of the island of Sulawesi or Celebes (Indonesia), where the coasts of this long and narrow peninsula run in a generally west-east direction. The town of Gorontalo is located on the south coast.

G is the principal and best known dialect in a larger language area, which also includes other closely related languages or dialects, such as the Bunda dialect (Bd), which is spoken in the Suwawa district to the east of the town of Gorontalo.

The languages adjacent to the Gorontalo language area are those of Bolaang-Mongondow (BM) to the east, and Buol, i.e. Bwuolo (Bw), to the west.

Throughout its vocabulary as well as in many of its affixes G shows the effect of a comparatively large number of sound changes which must have taken place in the relatively recent history of the language. As a result the phonetic shape of many words has often radically changed and several morphophonemic alterations have come into being in its morphology.

Since no data from older stages of G have been preserved, these sound changes and the previous situation have to be reconstructed by comparing the present-day G data with closely related languages or dialects in which these sound changes have not or have only partially taken place.

The language which has been used for this comparative purpose is BM, because it has turned out that many BM words and affixes have the shape which their G cognates must have had prior to the G sound changes. The synchronic evidence emerging from the comparison consists of rules of systematic correspondence between the G - BM cognates. The diachronic hypothesis arising from these rules of correspondence is that sound changes corresponding to these rules have operated in G, starting from original forms which had the same shape as the BM cognates concerned.

From the particulars of these sound changes a further diachronic specification emerges in that these sound changes appear to have operated in a definite relative order, which to a large extent can be reconstructed.

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It follows from the above that this G - BM comparison is a low-level one, contributing to recognising G and BM as belonging to a first-level grouping and to establishing a G-BM proto-language, in which no higher-level grouping or proto-language needs to play a role. But, even though some remarks as to the place of G-BM in a higher level grouping can be made, the next step should be to put the G and BM data in the wider view of their PAN ancestry. Another step should be to investigate whether there are other languages which belong to the same grouping as G and BM, one of the likely candidates being Bw. This is possible only when sufficient data from such other languages become available.

It has been possible to use BM for this comparative purpose because a large quantity of BM data is available in the grammar and dictionary published by Dunnebier (1929-30 and 1951).

The G data used are mainly those published in Badudu's morphology of the verb (1982) and Pateda's small dictionary (1977).

In principle the Bd dialect can also be profitably used in this context for comparison with G and BM cognates, but at present this is only possible to a certain extent because of the insufficiency of the available data. The main data and tentative conclusions concerning this dialect are therefore put together in a separate section. For Bd there are only available the G - Bd - Malay - Dutch wordlist published by Schröder in 1908, which contains quite a few printing errors and errors of notation, and a report on the structure of the Suwawa language by M.M. Kasim and others (1979), which does not include a list of lexical data.

A few lexical data of the Bw language are to be found in Van Andel's list of terms of customary law published in 1929. Some observations based on these data are given in a separate section.

2. THE PHONEMES OF G (INCLUDING Bd) AND BM

Both languages have the following phonemes, except for those in brackets, which occur in BM only.

Vowels: a, e, i, o, u

Diphthong: (ai), (au), (ao), (ea), (oi), (ui)

Consonants: p, b, m, mb, (mp)
 t, d, n, nd, (nt)
 c, j, ñ
 k, g, ŋ, ŋg, (ŋk), (ŋŋ)
 l, r, y, w, s, (ns)
 ?, h

1. G vowels occur either short or long, e.g. a or a:.
2. BM t preceding i is replaced by s.
3. G and BM palatals occur only in loanwords, BM ñ also in the 3rd person possessive suffix.
4. G has no final consonants; in BM all consonants except the prenasalised ones, the palatals, y and h may occur word finally.

3. A NOTE ON SPELLING

The spelling systems used for G by Badudu and by Pateda differ in one major respect. The former writes all glottal stops except word initially, using q, and leaves out w and y after u and i respectively. The latter writes all w and y wherever they occur but no glottal stop. For instance, the sequence ua means uwa in the former's spelling and u'a in the latter's. Both alternatives give a consistent spelling. For the sake of clarity we use a combination of these spelling systems, writing all glottal stops, even word initially, as well as all w and y.

Badudu defines nt as a voiced consonant (konsonan bersuara, 1982:16). Therefore we write nd in words in which Badudu and Pateda use nt. Probably the d in nd is slightly different phonetically from the intervocalic or initial d.

For BM we use Dunnebie's spelling, apart from such usual replacements as u instead of oe.

4. THE G SOUND CHANGES

The Gorontalo sound changes which have been found in the comparative manner outlined above are listed below, each one illustrated by an example of BM-G cognates, and in a sequence which is a highly random one as it is determined to a large degree by the particulars of the available examples. Since many examples show simultaneously the effect of more than one sound change, the examples in the list have for the sake of convenience been selected in such a way that none of them shows the effect of a sound change mentioned lower in the list. The sequence of the sound changes listed has been adapted to this principle wherever necessary. In this way several sound changes are illustrated more than once but, besides at their proper place, only in examples occurring lower in the list.

Some further particulars applying to this list are the following.

1. The term 'sound change' is for the sake of convenience defined as applying to loss or addition of a phoneme as well as to change of one phoneme into another.
2. The figures in brackets (1), (2), etc., which are used to indicate the successive sound changes in the list, serve as references to the sound changes as they occur in the list wherever they are mentioned again in this article.
3. Single consonants mentioned in formulating the sound changes are always meant as those occurring either word initially or intervocalically. Where prenasalised consonants are meant, these are mentioned separately as such.
4. The words 'before', 'after', and 'following' as used in formulating the sound changes are always meant to denote the position *immediately* before or after a particular phoneme.
5. The BM-G cognates selected as examples in the list are always basically each other's exact semantic equivalents in both languages, except in two cases. In BM another word than anak (sub (6)) is in use for 'child', but there exist the derivations mojanak meaning 'young, small (of children)' and inanakan 'large family, clan'. The second example mentioned sub (13) is the only example found of the change of -mbo- to -mu-.

6. List of sound changes:
(in arbitrary order)

	BM	G	Examples:
(1) final ʔ was lost	puluʔ	pulu	'ten'
(2) final a became o	mata	mato	'eye'
(3) k became ʔ	kita	ʔito	'we'
(4) initial ʔ before i became y and before other vowels w	iko ata	yiʔo wato	'you' 'slave'
(5) o was added after final consonant	utat	wutato	'brother'
(6) n became l	-anak	walaʔo	'child'
(7) g became h	dugi	duhi	'thorn'
(8) b before u became h	bulan	hulalo	'moon'
(9) r became l	ruit	luwito	'pointed'
(10) s became t	siku	tiʔu	'elbow'
(11) mb became m	see (13)	and (15)	
(12) nd became n	tandip	tanipo	'insert'
(13) o following b, mb, d, nd, g, became u	boli kombot	buli ʔomuto	'price' 'k.o. jambu / rose hip'
	dolop	dulopo	'dive'
	bondot	bunoto	'rotten'
	agom	wahumo	'submerge'
(14) a following b became o	batu bobag	botu bubohu	'stone' 'strike'
(15) a following mb, d, nd, g, ŋg became e	bomban dalam tandaʔ bogani nanga	bumeŋo delomo tane buheli lange	'disperse' 'deep' 'birthmark' 'brave' 'nangka fruit or tree'
(16) mp became mb	ompu	wombu	'grandchild'
(17) nt became nd	untu	wundu	'carry on the head'
(18) ŋk became ŋg	paŋkul	paŋgulo	'nit'

5. THE POSITION OF THE BUNDA DIALECT

The Bd dialect is in an intermediate position between G and BM as regards the G sound changes listed above. Several of them have operated in Bd too, but some have not. There is, moreover, one sound change which is peculiar to Bd.

Because of the insufficiency of the quantity and reliability of the data available for Bd this dialect is discussed here briefly and in a very preliminary way. Several uncertainties have remained, some of which may be clarified when better data become available. But some may also be due to the influence of the G language, as G has a dominating position as regards Bd because of its much larger number of speakers and its cultural prestige. It is clear, however, that Bd in several respects is much closer to BM than G. Its intermediate position serves to give additional support to the reconstruction of the G sound changes from a different angle.

1. Final a has not changed, e.g. mata 'eye', but k became ʔ (3) and initial ʔ became w or y (4), e.g. ʔita 'we', yiʔo 'you', wata 'slave'.

2. There are no final consonants because final ʔ was lost (1) and o was added after other consonants (5), e.g. pulu 'ten', wutato 'brother'.
3. The consonants n (6), g (7), and b (8) have not changed, e.g. wana ʔ o 'child', dugi 'thorn', bula 'moon' (see 7.1.1.b. below).
4. But s changed into t (10) and mp into mb (16), nt into nd (17) and ŋk into ŋg (18), e.g. ti ʔ u 'elbow', wombu 'grandchild', bundu - G hundu - BM buntu 'dike', tungudo - G tungudu - BM tu ŋkud 'stick'.
5. Probably mb and nd did not change (11) and (12), e.g. tumbolo - G tumulo 'live', tundu - G tunu - BM tundu ʔ 'show'.
6. Probably o became u following b, d, and g (13) unless these were originally final consonants, e.g. buli 'price', du ŋogo - G du ŋohu - BM do ŋog 'hear', gubi: - G huyi - BM gobii 'night'.
7. Probably a did not change following voiced occlusive (14) and (15), e.g. batu 'stone', dalomo 'deep', bugani 'brave'.
8. r did not change into l (9) but into h, e.g. hibu - G lihu - BM ribu 'thousand', habuto - G lahuto - BM rabut, yabut 'pull out', guhu 'teacher' (Mal guru), tindaho - G tinelo - BM sindar 'shine, light'.
9. Out of the 18 G sound changes 8 operated also in Bd (viz. 1, 3, 4, 5, 10, 16, 17, 18) and 8 did not (viz. 2, 6, 7, 8, 11, 12, 14, 15), one only partially (13) and one was different (9).

6. THE POSITION OF THE BWUOLO LANGUAGE

Because of the paucity of the data available for Bw only a few tentative conclusions can be made concerning the position of this language in comparison with G and BM. They seem to be sufficient, however, to establish that some of the same sound changes have operated in it as in G. For some of these changes only one example was available, however, and for some others none, so that several uncertainties remain to be clarified.

1. Final ʔ was lost (1), e.g. pulu 'ten'.
2. Final a became o (2), and o was added to other final consonants (5), e.g. mato 'eye', ato 'slave', anako 'child'.
3. a following b, d, or g became o, similar to (14) as far as ba is concerned but differing from (15) as to da and ga, e.g. bogu - BM bagu 'new', dolomo 'deep', bugoni 'brave'.
4. o following b, d, or g became u (13), e.g. bugoni 'brave', du ŋogu - BM do ŋog 'hear'.
5. mb became m (11) and nd became n (12), e.g. timo ŋo - BM simba ŋ 'weigh', tonono - BM tonda ŋ 'wages' (cf. G tonelo 'bride price').
6. mp became mb (16) and nt became nd (17), e.g. ombu 'grandchild', gonda ŋo - BM ganta ŋ 'k.o. measuring unit'.
7. As can be seen from several examples mentioned above, k, n, g, and initial glottal stop did not change.
8. There is one change which is peculiar to Bw, viz. that b preceding u became bw (as in the name Bwuolo itself, which is usually known as Buol), e.g. bwuta - BM buta ʔ 'earth'. As a result the difference between *bo and *bu is retained as bu and bwu.

7. SOME IMPLICATIONS AND FURTHER DETAILS OF THE G SOUND CHANGES

In the following paragraphs some further particulars are discussed showing what effects the sound changes have had on Gorontalo.

One of the most important questions is that of their regularity. If these sound changes deserve this name they should be regular or exceptionless, according to the classical definition of the term sound change or sound law in comparative linguistics. It should be determined how regular they are and, if there are or seem to be exceptions, in how far these can be explained. A partial answer to this question can be found in the way they have been formulated. Whereas several of them have been defined as operating unconditionally, others are stated to apply under specific conditions only, viz. initially, finally, and preceding or following particular sounds. The latter may be considered to be exceptions to unconditional sound changes, regularly explained within the context of the sound changes themselves. Some more complicated cases follow below.

In the present section exceptions occurring in loanwords are left aside provisionally, as they show specific differences, some of which class them together as a distinct group. They are discussed in a separate section (see 8, below).

7.1. The word end

7.1.1. If the sound change under (2) operated regularly the result would be that a never occurs word finally. There are nonetheless several words which have a final a. From those cases in which cognates exist in BM three reasons can be given for the occurrence of final a.

a. Some of these words have originally had a final ʔ , which was lost according to (1), so that only after this loss of final ʔ the originally prefinal a became final, e.g.

dila – BM dila ʔ 'tongue' (1)
 dupa – BM dupa ʔ 'to forge' (1)
 huta – BM buta ʔ 'earth' (8), (1)
 $\text{ʔ}o/yinda$ – BM inta ʔ 'one' (4), (17), (1)
 mama – BM mama ʔ 'chew betel' (1)

b. In other cases, many of which are tri- or quadrisyllabic, a final n was lost after prefinal a. Although there are several examples, this loss of final n can not be called a sound change in the same right as the others because there are other words which end in -alo as a reflex of -an, such as tulalo – BM tulan 'bone'. Possibly this loss of final n was in fact the (sporadic) loss of final lo after a, e.g.

dutula – BM dutunan 'river' - 'river for bathing' (6)
 hulawa – BM bulawan 'gold' (8)
 hutiya – BM gosi $\text{ʔ}an$ 'rotan' (7), (13), (10)
 $\text{ʔ}olowala$ – BM koloanan 'right hand' (3), (6)
 $\text{ʔ}ologiya$ – BM koronjan 'nobleman' (3), (9)
 tambala – BM tampalan 'spotted' (17)
 wulipa – BM ulipan 'centipede' (4)

In at least one case there is a semantic differentiation between the words with and without the final n or lo, viz. hulalo 'moon, month' and hula 'month (as a measuring unit)', e.g. wolomo hula 'six months' - BM onom no bulan.

In Bd this loss of final n after a seems to be more regular or perhaps even exceptionless, e.g. tula 'bone', bula 'moon', dala 'road'.

A similar loss of final lo from n is met with in the verbal suffix -a (from -alo, from -an), see sub 10.7.3. below, and may be regarded as the origin of the loss treated in the present subsection.

c. Occasionally we find other a final words which have lost a final consonant other than l from n, e.g. hula - BM bulag 'albino'.

7.1.2. Originally final a[?] did not result in final a when this was preceded by mb, d, nd, or g because a changed into e in this position according to (15). There are only examples of words with originally final nda[?], ga[?], and probably mba[?], viz.

tane - BM tanda[?] 'birthmark' (12), (15), (1)
 bohe - BM бага[?] 'abscess' (14), (7), (15), (1)
 tohe - BM toga[?] 'Lamp' (7), (15), (1)
 time - (e.g. Sangirese) timba[?] 'scoop out' (11), (15), (1)

7.1.3. The o which according to (5) was added after final consonant became u according to (13) when this consonant was b, d, or g. This also happened when final a had changed into o according to (2), while the preceding consonant was b, mb, (n)d, or g. As a result there are no words ending in *bo, *do, *ho (from go), *mo (from mbo), or *no (from ndo). Instead these words end in bu, du, hu, mu, or nu, e.g.

wangubu - BM aṅkub 'cover' (4), (18), (5), (13)
 wulodu - BM ulod 'caterpillar' (4), (5), (13)
 yilihu - BM ilig 'stream' (4), (7), (5), (13)
 pobu - BM poba 'burn' - 'burn lime' (2), (13)
 bohu - BM бага 'coal' (14), (7), (2), (13)
 to/onu - BM onda 'where' (12), (2), (13) (to 'in, at')
 wonu - BM onda 'if' - 'where'

No examples have been found of -du from -da, and of -mu from -mba.

7.2. Initial glottal stop and initial semivowels

Information from native speakers leaves no doubt that glottal stop occurs in initial position in a number of G words. According to sound change (3) it replaces k in that position as it does in intervocalic position. As a result of (3) and (4) vowels do not occur word initially in G.

It is less clear whether initial glottal stop also occurs in BM. According to Dunnebier (1929:317) an initial vowel is preceded by a 'soft blow' (*lichte aanblazing*) to be distinguished from glottal stop as a 'real consonant'. But M. Charles (1974:486) transcribes such BM words with initial q for glottal stop

presumably on the basis of information from BM speakers. If nevertheless the former alternative is the correct one, the G sound change (4) might preferably be formulated as: y was added before initial i and w before other initial vowels.

It seems clear, however, that this sound change took place in word-initial position only, as can be seen from examples as BM *onda* 'where' - G *wonu* 'if' and G *to:nu* 'where', in which the final o of the preposition *to* and the initial o of **onu* have become o:; and BM *ompu* 'grandchild, grandfather' - G *wombu* 'grandchild' and *tiyombu* 'grandfather', in which the semivowel is not w but y, following the final i of the 'personal article' *ti* (from *si*, as in Malay, but not in BM). The same is the case in G *ti:lo* 'mother' and *tiyamo* 'father' from **ina* and **ama* (BM *ina?* and *ama?*, contra 7.1.1.a.). Similarly the term *wali-wali* 'k.o. social class' may be pronounced with two w's but also as *waliyali*.

7.3. Convergence and homonymy

In several cases two or more sound changes have directly or indirectly led to the same result, though starting from different origins. In consequence there is a marked tendency towards convergence of sounds in G, which in some cases resulted in the emergence of new homonyms. Some examples are given below.

Since both g and b (before u) changed into h, initial hu in present-day G may be the reflex of either gu or bu, e.g.

huwoto - BM *gu?ot* 'gums' (7), (4), (5)

huwo?o - BM *buok* 'hair' (8), (3), (5)

Final hu may be the reflex of ga, gu, go, or bu, e.g. (with two pairs of new homonyms):

bohu - BM *baga* 'coal' (14), (7), (2), (13)

bohu - BM *bagu* 'new' (14), (7)

wahu - BM *agow* 'to rob' (4), (7), (13) (BM -ow from -o)

wahu - BM *abu* 'ashes' (4), (8)

Similarly both n and r changed into l, so that l in G may be the reflex of n, r, or l, e.g. (with two sets of new homonyms):

huli - BM *buli* 'loose' (8)

huli - BM *buni* 'conceal' (8), (6)

huli - BM *buli?* 'underside' - 'buttocks' (8), (1)

huli - Bd *guli* 'to install' (7)

mulo - BM *muna* 'first' (6), (2)

mulo - BM *mula* 'to plant' (2)

tuludu - BM *tulud* 'push off' (5), (13)

tulubu - BM *turub* 'burn' (9), (5), (13)

Other sound changes may also bring about new homonyms, e.g.

tiyo - BM *sia* 'he' (10), (2)

tiyo - BM *siow* 'nine' (10)

7.4. Some place names

7.4.1. The G pronunciation of names of places outside the G territory naturally shows the effect of the G sound changes and presents good evidence if the original names are known. Some examples are the following:

Moŋonu - BM Moŋondow (12), (13)

Moladu - BM Monado (Manado or Menado, the capital of Minahasa) (6), (13)

Huwa - Gowa (Makassarese kingdom in South Celebes) (7), (13)

Huwolo - Bw Bwuolo - BM Buol (8), (5)

?Uwanenŋo - Kuwandaŋ (place on the north coast) (3), (12), (15), (5)

Bodu - BM Bado? (the Bajo sea-nomads) (14), (13), (1)

Bune - Bd Bunda (12), (15)

The last comparison shows that the original name must have been *Bonda?, in which the changes (13) and (1) have operated both in G and in Bd. If Bunda was the original form, the G one should have been *hunu.

7.4.2. The G name for Gorontalo is Hulondalo, which can be explained as the regular result of the sound changes (7), (13), (9) and (17). This is partly but not completely confirmed by the Bd and BM forms of this name. The origin of the first l is uncertain. It can be the G reflex of l, r, or n, which in Bd are reflected as l, h, and n. The Bd form of the name is Golondalo, however, and the BM form is Gonotalon. This conflicting evidence can be explained by assuming that the BM form is the original one and the Bd one is a borrowing from G dating from a time when n had become l and nt had become nd in G but the other G sound changes concerned had not yet taken place. The final n of the BM form, which may have dropped in both G and Bd, seems to confirm that the BM form was the original one. The possibility that at one time the name was pronounced Golontalo is confirmed by its form in Makassarese, which is Golontalo.

7.5. Semantic change

Although the G - BM cognates given as examples have been limited to those which show no or only a small semantic difference, there are several others in which semantic change has clearly taken place, e.g.

bilohu 'to see' - BM bilog 'blind' (7), (13)

yilaluhu 'town' - BM inalug 'village road' (4), (6), (7), (5), (13)

?ulu?u 'hand' - BM konuku 'nail of the finger' (3), (6) (with assimilation of o into u)

walito 'animal skin' - BM alit 'rope made of animal skin' (4), (5)

8. BORROWINGS

There are quite a few Gorontalo words which were borrowed from other languages such as Arabic, Malay/Indonesian or Dutch. Very few, if any, of these borrowings show the effects of the G sound changes whenever these are applicable. Most of them do so only partially or not at all. In many cases one particular sound change is applied but another one not. Some sound changes hardly ever occur in loanwords, others occur in some words but not in others. Sometimes there

are two variants of a loanword, one with and one without the sound change concerned. There is also a difference depending on the educational level of the speaker, in such a way that the knowledge of Malay/Indonesian tends to increase the number of cases in which the sound changes are not applied in borrowings from this language.

8.1. Loanwords which have been affected by every applicable sound change are scarce. Even the following two examples pose some problems.

tihi 'mosque' - BM sigi (10), (7), from Malay masigit 'mosque' which is ultimately from Arabic masjid 'place of prostration'. There is a semantic difference in that in BM sigi is a (non-Muslim) 'small village temple' and masigi is 'mosque'. Nevertheless it seems most plausible that both tihi and sigi are loanwords. wadala 'horse' (not in BM; cf. BM kabalo 'horse' from Spanish) is ultimately derived from Jav. *ajaran 'trained animal' (4), (9), d from j, and final n dropped according to 7.1.1.b. above.¹ The a instead of e after d is an exception to sound change (16), possibly caused by the palatal origin of this d.

8.2. The way in which various G sound changes have affected borrowings is further exemplified below.

8.2.1. Final a hardly ever changed into o according to (2). An example is perhaps tolimo 'receive', if this is a loan from Malay tarima (cf. BM tarima explained as borrowed from Malay) and not inherited.

8.2.2. Initial ʔ is hardly ever replaced by semivowel according to (4); wadala 'horse' is the only example I have found. As a result there are several loanwords with initial vowel (preceded by ʔ) which is not the result of the loss of initial k, e.g. ʔalabaʔa 'Wednesday' (Mal/Ar arbaʔa) (Pateda: arabaʔa). On the other hand there are some examples of the loss of initial k according to (3), e.g. ʔapitalau 'admiral' (Mal kapitan laut), ʔatetela 'ketela', ʔupiya 'kopiah, fez'. In many words the k has been preserved, e.g. kaputenji 'captain' (Du kapitein), nika 'marry' (Mal/Ar nikah).

8.2.3. Hardly any borrowing has o added after final consonant according to (5). An example is perhaps kayito 'hook' (Mal kait), which exists beside ʔayito 'hook' (cf. BM kait 'to knit').

In most other cases the vowel added after final consonant of loanwords is either i (unless the final consonant is a labial) or u, while at the same time the penultimate vowel is usually lengthened. Examples with final i are: basi 'craftsman' (Du baas), di:kili (Mal/Ar dikir), ka:pali 'ship' (Mal kapal), ka:yini 'cloth' (Mal kain), ku:raŋi 'less' (Mal kuraŋ), ka:ntori 'office' (Mal/Du kantor), me:maŋi 'certainly' (Mal memaŋ), pa:tali 'market' (Mal pasar),

ra:cuni 'poison' (Mal racun), sabari 'patient' (Mal sabar). The vowel is u if the final consonant is a labial, e.g. ?ima:mu 'imam', capu 'seal' (Mal cap), sababu 'because' (Mal/Ar sabab), lemu 'glue' (Mal/Du lem), bomu 'harbour' (Du boom), kolopu 'all right' (Du klopt), but also in some other cases, e.g. boku 'bay' (Du bocht), roku 'frock' (Du rok), bo:roku 'bail' (Du borg), ba:ngurutu 'bankrupt' (Du bankroet), bu:tulu 'bottle' (Mal botol).

8.2.4. There are few examples of n which changed into l according to (6), e.g. talala 'trousers' (Mal celana).

8.2.5. Often but not always g changed into h according to (7), e.g. da:hanji 'commerce' (Mal dagaŋ), but da:giŋi 'meat' (Mal dagiŋ), halati 'glass' (Mal/Du gelas), hula 'sugar' (Mal/Skt gula), huna 'utility' (Mal guna), naha or naga 'dragon' (Mal/Skt naga), lahu 'song' (Mal lagu), but ga:risi 'line' (Mal garis), etc.

8.2.6. Mostly r changed into l according to (9), e.g. gulu 'schoolmaster' (Mal/Skt guru), halahadi 'saw' (Mal gergaji), luhi 'loss' (Mal rugi), su:kali 'difficult' (Mal sukar), but also guru, rugi occur.

8.2.7. There are some examples of the change of bu into hu according to (8), e.g. sahatu 'Saturday' from *sabutu (Mal/Ar sabtu) and tahuda 'word' from *sabuda (Mal/Skt sabda).

8.2.8. Usually s changed into t according to (10), e.g. ka:tulu 'mattress' (Mal kasur), tababu 'because' (Mal/Ar sabab), tu:kali 'difficult' (Mal sukar), though in many cases s remained.

8.2.9. There are few examples of the change of o into u following b, d, or g according to (13), e.g. bu:tulu 'bottle' (Mal botol), du:bulu 'double' (Mal/Du dobol), dusa 'sin' (Mal/Skt dosa), huhuhu 'grand vizier' (BM gogugu from Ternatan (jou) gugu).

8.2.10. In most cases mp changed into mb, and ŋk into ŋg according to (16) and (18), e.g. pomba 'pump' (Mal/Du pompa), ?o:ŋgosi 'expenses' (Mal/Du oŋkos), pa:ŋgati 'rank' (Mal paŋkat).

8.3. The loanwords in G as briefly described above constitute a heterogeneous group of words, as is usually the case in any language. As they were adopted from structurally quite different languages and presumably at different times in the past, they have been adapted to the existing G sound structure in various ways and degrees. This in itself is a general characteristic which classes them together as a separate group. A second more specific one is the fact that, as mentioned sub 8.2.3. above, the vowel added after final consonant is not o according to the earlier sound change (5) but i or u according to more or less strictly applied rules.

At the same time many examples of loanwords in which G sound changes did take place, show most clearly that the particulars of these sound changes were the same as those found in the inherited part of the vocabulary.

9. UNEXPLAINED EXCEPTIONS

There are a number of G words which, while not obviously recognisable as borrowings, do not show the effect of the applicable sound change as it should have been expected from comparable cases. Most conspicuous are those which clearly have cognates in BM. They do not invalidate the evidence for the sound changes as it has been given earlier, but should be regarded as unexplained exceptions as long as no acceptable explanation has been found.

We give some examples of the most obvious cases.

9.1. Some words have initial ha-, which should have become he if it reflected ga according to (15) as in e.g. hetuto - BM gatut '*hundred*', viz.

hama - BM gama? '*take*'
hawu - BM gau '*cigarette*'

9.2. A number of G words have initial da, which should have become de according to (15) as e.g. in dehetu - BM dagat '*sea*', viz.

dalalo - BM dalan '*road*'
damahu - BM damag '*resin*'
dalahu - BM darag '*yellow leaf*' - '*yellow*' (but G lalahu Bd dahago '*yellow*') cf. also datahu '*flat, level*', not in BM but clearly from *datag.

9.3. A number of G words have initial ba, which should have become bo according to (14) as e.g. in botulo - BM batun '*ascend*'. Some of them have cognates in BM, viz.

bataŋa - BM bataan '*body*' - '*personal appearance*'
bataŋo - BM batak '*stem*'
bata'o - BM batak '*bad-mannered*'

9.4. A number of G words have one or more k's for which ? should have been expected according to (3). Some of them have BM cognates, viz.

kikilo?o - BM kilok '*tickle*'

kokobu - BM kokob '*bite*' - '*chew something hard*', cf. e.g. ?o?odu - BM kokod '*embrace*'.

10. AFFIXES AND MORPHOPHONEMIC ALTERNATIONS

10.1. Quite a few of the G verbal and nominal affixes show the effect of one or more of the sound changes, leading in some cases to morphophonemic alternations. We give the following examples.

10.1.1. The verbal prefix *mo* has several allomorphs, among which in the first place *moN-* may be mentioned. The nasal replaces the initial consonant of the base to which the prefix is added and is either *m* or *ŋ*. The *m* occurs if the initial consonant of the base is *p*, *b*, or *h*; the *ŋ* only if the initial consonant is *k*, *?*, *w* or *y*, e.g.

pututo : momututo '*to wrap up*' (BM putut)

biyahu : momiyahu '*to care for*' (BM biag : momiag)

huwato : momuwato '*to lift*' (BM buat : momuat '*to lift*', '*to go upwards*')

kokobu : moŋokobu '*to bite*' (BM kokob : moŋokob '*to chew something hard*')

?u?udu : moŋu?udu '*to remove scales*' (BM kukud : moŋukud '*to scrape*')

wuli : moŋuli '*to revert to previous condition*' (BM uli? : moŋuli '*to recover*')

yilu : moŋilu '*to drink*' (BM inum : moŋinum).

The cases in which initial *h* is replaced by *m* are restricted to those in which *h* is followed by *u* and are therefore explicable, as in the example given, by the sound change (8) (*bu* became *hu*). In the same way the replacement of initial *?*, *w* and *y* by *ŋ* can be explained by the sound changes (3) (*k* became *?*) and (4) (*?* became *w* or *y*), respectively.

10.1.2. Most bases with initial *w* and *y*, however, have an allomorph of the prefix, in which the initial consonant is replaced by *h*, while a following initial *w* is replaced by *e*, and *o* following initial *w* by *u*. These replacements are explicable by the sound changes (7) (*g* became *h*), (15) (*ga* became *ge*), and (13) (*go* became *gu*), as is confirmed by BM cognates, e.g.

yimo?o : mohimo?o '*to collect*' (BM imok : mogimok)

wulilo : mohulilo '*to steer*' (BM ulin : mogulin)

waluto : moheluto '*to invite*' (BM anut : moganut)

wotuto : mohututo '*to pass gas*' (BM otut : mogotut)

This implies that diachronically the *h* did not replace initial *w* or *y*, since the latter never occurred in this position, which in the prefixed verb was not the initial one. In fact the allomorph *moh-* is a reflex of the prefix *mog-*, which occurs in BM, where it is prefixed to vowel-initial bases only. Clearly the same limitation of occurrence once applied to *moh-* in G and therefore may be ascribed to Proto-G-BM.

Both G moh- and BM mog- alternate with moŋ- in such a way that every given base concerned has unpredictably either the former or the latter prefix (in BM sometimes both occur with the same base with semantic difference). Sometimes a difference can be observed in this respect between G and BM, e.g. wunemo : mohunemo 'to cure' - BM undam : moŋundam.

10.1.3. Bases with initial t have an allomorph of the prefix in which t is replaced by l. This can be explained by the assumption that originally this t was replaced by its homorganic nasal n, which afterwards changed into l according to (6), e.g. toneʔo : moloneʔo 'to take soundings' - BM tondak : monondak.

10.2. Similarly the preterital prefix lo- reflects no- (BM idem) as a result of sound change (6).

10.3. The prefix ʔo- denoting possession, which is not dealt with in Badudu 1982 and treated as an independent particle in Pateda 1977, is the reflex of ko- according to (3), e.g. pali 'wound' : ʔopali 'wounded' - BM paliʔ : kopaliʔ.

Formally the same prefix occurs with numerals, e.g. wopato 'four' : ʔo:pato 'fourth' - BM opat : koopat.

10.4. The prefix moʔo-, meaning 'to be able to', is the reflex of moko- (BM idem) according to the sound change (3), e.g. moʔodunohu 'to be able to hear' - BM mokodonog.

10.5. The prefix mohi-, meaning 'to wear (a piece of clothing)', is the reflex of mogi- (BM idem) according to sound change (7), e.g. mohisapatu 'to have shoes on' - BM mogisapatu.

10.6. There are two infixes, the passive/preterital -il- and the futural -um-. The former is the reflex of -in- according to (6). It may be infixated within prefixes, e.g. ʔo- : ʔilo- (BM ko- : kino-). When it is infixated in a base which has initial w, this consonant is replaced by y according to sound change (4), e.g. wohi : yilohi 'give' (BM ogoi : inogoi).

In those cases in which the change of an initial consonant is conditioned by the occurrence of a particular vowel immediately following it, or the change of vowel by the occurrence of a specific consonant immediately preceding it, such as according to (8) (bu became hu), or (13) (do became du), it might have been expected that these changes did not occur if an infix was placed between this consonant and the immediately following vowel. Some examples of this expected phenomenon occur.

When we compare G dumodupo 'morning' and du:dupa 'early in the morning' with BM mododop 'early', it is clear that do changed to du twice according to (13), but not where d and o were separated by the infix -um-. Similarly, when

comparing G bubohu 'hit' and bilobohu 'hit (pass.)' with BM bobag 'hit', we see that bo changed to bu according to (13), but not where b and o were separated by the infix -il-. Other examples are: buli 'price' but biloli 'debt' - BM boli 'debt, price', and hutu 'penis' but bilutuwa 'castrated' - BM butu? 'penis'. G hulo'o 'to sit' has no cognate in BM nor in Bd, and the initial h could therefore have originated from b or from g. That the former was actually the case appears from the noun bilulo?a 'seat' (not in Pateda, but found in a G poem).

Probably these are exceptional occurrences, however, at least in the present-day language. Usually this kind of sound change also applies when an infix separates the consonant and the vowel concerned, e.g. dehito 'snatch' : dumehito 'will snatch' - BM dagit : dumagit.

10.7. The suffix -a occurs in various morphological functions, among which the imperative may be specially mentioned here. As to its morphophonemic aspects, however, it can be treated as one and the same suffix in all its functions.

10.7.1. It shows the effect of sound changes in cases of bases to which o was added after final consonant according to (5). When the suffix was present, the final consonant of the base was no longer final and therefore o was not added here, or, in other words, the suffix was added immediately after the final consonant of the base. The synchronic result is that the final o of such bases is replaced by the suffix, e.g. pututo 'wrap up' (BM putut) : pututa 'wrap up!'.

This also happened when the final consonant of the base was b, d, or g. The suffix -a was added immediately after these, but then changed into e according to (15), just as the o added after the final consonant of such bases changed into u according to (13). The synchronic result is that the suffix -a appears as -e replacing final u, e.g.

tulubu 'burn' (BM turub) : tulube 'burn!'
 tuludu 'push' (BM tulud) : tulude 'push!'
 tunuhu 'follow' (BM tundug) : tunuhe 'follow!'

10.7.2. In some cases the suffix is synchronically not -a but -ma, -la, or even -ala. These exceptional cases can be explained as the result of the loss of the final consonant of the base (together with that of the o added after it and, in the last mentioned case, of the a preceding it) in other derivations. There are at least three examples which have cognates in BM showing that this was what happened, viz.

yilu 'drink' : yiluma 'drink!' - BM inum
 wawo 'weave' : wawola 'weave!' - BM abol (with assimilation of b to w ?)
 pota 'carry on the shoulder' : pota:la 'carry on the shoulder!' - BM potaan.

10.7.3. The fact that this -a suffix did not change into -o according to (2), although it is a final vowel, must mean that it was not yet final when this sound change took place and that a final consonant following it was lost

afterwards. This final consonant must have been n and the suffix in fact was the well-known suffix -an, as is proved by BM, where -an occurs in many cases with the same morphological functions as -a and its allomorphs in G, among others that of the imperative. Some examples out of many are the following:

yiluma 'drink!' - BM inuman 'drink of it!'
 litode 'twine!' - BM litodan 'roll up!'
 pitota 'tighten!' - BM pitotan 'strangle (with a rope)!'

This loss of the final n is analogous to that in trisyllabic nouns such as hulawa 'gold' (BM bulawan) mentioned earlier (see sub 7.1.1.b. above).

As regards the -a suffix as imperative it may be concluded that this, contrary to Adriani's statement (1908:163) on this point in his remarks about the Gorontalo language, is not the 'conjunctive' or 'irrealis' suffix -a, which is found in several languages such as Javanese, Makassarese and some Bisayan dialects with imperative meaning among others. If it existed in G, it should have become -o according to the sound change (2).

The reason why the suffix -an lost its final n in G may have been that it regularly should have become - and possibly first did become - -alo, whereas -lo also exists as a suffix as well as a separate particle. It may occur in combination with the imperative -a with emphatic meaning, e.g. tali 'buy' : talia 'buy!' : talialo 'do buy!'.

10.8. The 3rd person possessive suffix has two allomorphs, viz. -iyo and -liyo, which reflect -*ia and -*nia according to the sound changes (2) and (6). In BM they are -ea and -ña, the former occurring after final consonant (except ?), the latter after final vowel (and ?). The same distribution (? left aside) must have existed in G prior to the addition of o after final consonant according to (5). As a result the allomorph -iyo is suffixed to words ending in this o but then replacing this final vowel, e.g. wala'o 'child' : wala'iyc 'his child', but e.g. wato 'slave' : watoliyo 'his slave'. Historically the o of sound change (5) was never added to words like wala'iyo since there was no final consonant because of the presence of the suffix.

This phenomenon can be used as a means to find out whether or not a final o or u is diachronically an added one according to (5). For example, the assumption that bi:hu 'lip' is the cognate of BM bibig according to (5), (7) and with loss of the second b, is confirmed by bi:hiyo 'his lip'.

11. RELATIVE ORDER

If the several sound changes are compared among each other, it can be remarked that some of them are interrelated with certain others in that they concern the same phoneme in different ways. If these interrelated sound changes are analysed under the assumption that sound changes operate exceptionless within their respective conditional limits and within a certain limited time, it appears to be possible to establish the relative order in which such interrelated sound changes took place.

11.1. In some cases a certain phoneme was lost in all its occurrences as the result of one sound change, but the same phoneme re-emerged elsewhere as the result of another sound change, e.g. all n's were lost after they had become l according to (6), but n re-emerged when d in nd had become lost according to (12); similarly initial ʔ was lost after it had become w or y according to (4) but re-emerged in other words as the result of the change of k into ʔ according to (3). This implies that these changes occurred in both cases in the order in which they have been mentioned just now, i.e. the change of n into l took place and ceased operating before that of nd into n began operating, since otherwise n from nd would also have become l. Similarly the change of ʔ into w/y predated that of k into ʔ.

11.2. In some cases it can be observed that more than one sound change must have taken place in one and the same position in a given word, which implies that one of these changes operated later in time than the other. Their relative order follows from the details of the changes concerned. For example, if bohu is the reflex of *baga, the final a can only have become u, if it changed into o according to (2) first, since otherwise a following g would become e according to (15). This means that the change of final a into o (2) predated that of go into gu (13) and that of ga into ge (15).

Another example is onu in to:nu 'where', BM onda. The final a became o according to (2) first, then changed into u following nd according to (13), after which nd became n according to (12), the relative order thus being onda > ondo > ondu > onu.

A comparable case is the following. If tohe 'lamp' is the reflex of toga⁷ (BM idem), the loss of final ʔ according to (1) must have postdated the change of final a into o according to (2), since otherwise the a in ga⁷ would have become final and would then have changed into o, and this into u following g according to (13). This means that the change of final a into o (2) predated the loss of final ʔ as well as the change of go into gu (13).

11.3. There are also sound changes which must have taken place at the same time, such as (13), o following (m)b, (n)d, or g became u, since this can be formulated as: o following voiced stop became u. This implies that the change of g into h (7) must have postdated (13), since otherwise the final syllable of *bago (from *baga) would have become *ho instead of hu. For the same reason the change of ba into bo (14) must have postdated (13), since otherwise the first syllable of bohu (from *baga) would not have remained bo but would have become bu.

Similarly the change of bu into hu (8) must have predated (13), since otherwise bu from bo (13) would also have changed into hu.

Similarly the change of a following mb, (n)d, or g into e (15) must have predated that of g into h (7), since otherwise *toga would have become *toha instead of tohe.

But the change of ba into bo (14) must have predated (15), since otherwise ba would also have become be according to (15), and it must have postdated (13), since otherwise bo from ba would have become bu according to (13).

11.4. The changes of mb to m and nd to n (11) and (12) are interrelated as in both cases voiced stops preceded by homorganic nasal were lost, but apparently there was no analogous change of ŋg into ŋ (cf. *lange* from **naŋga* according to (15). Examples such as *kombot* - ʔomuto 'k.o. *jambu* / *rose hip*', *tondok* - tonuʔo 'fence', as well as *bombarŋ* - bumeŋo 'disperse' and *sindar* - tinelo 'light' show that these changes postdated both (13) and (15).

The changes of mp into mb, nt into nd, and ŋk into ŋg (16), (17) and (18) clearly postdated those of mb into m and nd into n (11) and (12), since otherwise the voiced stops resulting from the former would have become lost as a result of the latter.

11.5. It follows from the foregoing subsections that there are three pairs of interrelated sound changes as well as a group of seven, all of the latter involving voiced stops, for which the relative order within the pair or group is certain, namely:

- A. 1. final a > o (2)
- 2. loss of final ʔ (1)
- B. 1. initial ʔ > w/y
- 2. k > ʔ (3)
- C. 1. n > l (6)
- 2. nd > n (12)
- D. 1. bu > hu (8)
- 2. (m)bo > (m)bu, (n)do > (n)du, go > gu (13)
- 3. ba > bo (14)
- 4. mba > mbe, (n)da > (n)de, ga > ge (15)
- 5. g > h (7)
- 6. mb > m, nd > n (11), (12)
- 7. mp > mb, nt > nd, ŋk > ŋg (16), (17), (18)

The relative order of A, B, C, and D cannot be ascertained more precisely than that A1 predated D2, but D4 (and thus D1-3) predated A2 (see 7.1.2.), whereas C1 predated D6.

12. SUBGROUPING

Adriani (1914:183-217) and, following him, Esser (1938) have placed Bolaang Mongondow in a subgroup of Philippine languages together with Sangirese-Talau and the Minahasa languages, and have grouped Gorontalo together with Buol, Kaidipan and Bulango in a Gorontalo subgroup not belonging to the Philippine languages.

In view of the materials contained in the present article it seems warranted to revise this classification and to group G and BM much more closely together. If BM should be recognised as belonging to the Philippine family of languages, G should at least be included into it too.

This conclusion has also been reached by M. Charles who included Gorontalo in his treatment of Philippine languages "because comparison revealed striking similarity in the vocabularies and (to a point) in the phonological histories of Mongondow and Gorontalo" (1974:487). And we may

add similarity in their morphologies as a third indication of their close relationship.

Whether G and BM together with the other languages mentioned by Adriani and Esser belong to a common subgroup, must be determined by further comparison of these languages among one another and with what is known of Proto-Philippine and Proto-Austronesian.

We mention some points concerning G and BM as examples.

12.1. There are other G-BM correspondences not mentioned before. For instance, in several examples G final *-e* corresponds to BM final *-oi*, e.g.

bele - BM baloi 'house' (with assimilation of the first vowel to the second, cf. Bw bole 'house')
 pate - BM patoi 'kill'
 tuŋe - BM tuŋoi 'horn'
 wale - BM anoi 'ant' (4), (6)
 wu:wate - BM uatoi 'iron'
 pale - BM payoi 'rice plant'

In some cases, however, the correspondence is G *-i* : BM *-oi*, e.g.

pani - BM pandoi 'skilled' (12)
 wohi - BM (b)ogoi 'give' (4), (7)

12.2. Though in many cases BM did not change from putative Proto-G-BM, there is also evidence for sound changes which have taken place in BM. For instance, Proto-G-BM apparently retained PAN *S- as h-, with subsequent loss of h- in BM, but not in G, e.g.

G hataŋo - BM asaŋ 'gills'
 G huwabu - BM uab 'yawn'

In several cases of the correspondence of G *l* : BM *r* there is a BM doublet with *y*, which may point to a development in BM of *r* to *y*, e.g.

G lahuto - BM rabut / yabut 'pull out' PAN (r)ebut/Rabut
 G le:to - BM raat / yaat 'bad' PAN zaqet
 G hulu?o - BM buruk / buyuk 'rotten' (cf. Bd buhu?o) PAN buRuk
 G lolom/bula - BM bura? / buya? 'foam' PAN bujaq

In several other cases, among which the reflexes of PAN *j*, the correspondence is G *l* : BM *y* : Bd *h*, e.g.

G tili - BM si(y)i? - Bd tihi 'side' PPH siDiq
 G tolomo - BM toyom - Bd toho 'ant'

12.3. As an alternative of the G sound change (13), i.e. *o* following (m)b, (n)d, *g* became *u*, it may be assumed that this *u* is a direct reflex of an inherited or secondary schwa, which in other environments is reflected as *o*, whereas it is reflected as *o* in all environments in BM. This assumption is made by Charles (1974:469-470) in his explanation of the G word in the example "PPH *dapdap

'Erythrina spp.' ... BM dodap ...; G dudepo ... with /u/ < secondary *e following *d". These alternatives illustrate the difference between considering G and BM as reflecting the higher level proto-languages PPh or PAN directly or via Proto-G-BM, as has been done in the present paper. It seems, however, that examples such as BM poba - G pobu show that the G sound change (13) has indeed taken place, since the final o of the putative intermediate form *pobo does not reflect a schwa. Examples of the change of o into u following g are also to be found in such loanwords as the toponym Huwa from Makassarese Gowa and huhuhu 'grand vizier' from gogugu (BM idem), from Ternatan (jou) gugu.

NOTE

1. In Jav. itself *ajaran 'horse' from ajar 'teach, train' has changed into jaran with loss of initial a analogically to Jav. loss of the verbal prefix a-. The same change may have taken place in Makassarese, in which 'horse' is jaraŋ and where the verbal prefix a- was usually also dropped. In Buginese, where this prefix has not dropped, the word for 'horse' has kept its initial a, whereas the palatal consonant was nasalised and geminated: aññaraŋ.

BIBLIOGRAPHY

ADRIANI, N.

- 1908 Breukink's bijdragen tot eene Gorontalo'sche spraakkunst besproken. *Bijdragen tot de Taal-, Land- en Volkenkunde van Nederlandsch-Indië* 70:150-165.

ADRIANI, N. and A.C. KRUYT

- 1914 *De Bare'e-sprekende Toradja's van Midden-Celebes*, vol.3. Batavia: Landsdrukkerij.

ANDEL, W.J.D. van

- 1929 Boeoolsche adatrechttermen. *Adatrechtbundels* 31:28-68.

BADUDU, J.S.

- 1982 *Morfologi kata kerja bahasa Gorontalo*. (Doctoral thesis in linguistics, University of Indonesia, 1975.) Jakarta: Panerbit Djambatan.

CHARLES, M.

- 1974 Problems in the reconstruction of Proto-Philippine phonology and the subgrouping of the Philippine languages. *Oceanic Linguistics* 13:457-509.

DUNNEBIER, W.

- 1929-30 *Spraakkunst van het Bolaang Mongondowsch. Bijdragen tot de Taal-, Land- en Volkenkunde van Nederlandsch-Indië* 85:297-468, 524-621; 86:42-177. Published, same years, in book form, The Hague: M. Nijhoff.
- 1951 *Bolaang Mongondowsch-Nederlandsch woordenboek met Nederlandsch-Bolaang Mongondowsch register*. The Hague: M. Nijhoff.

ESSER, S.J.

- 1938 Talen (map 9b). In: *Atlas van tropisch Nederland*. Amsterdam: Koninklijk Nederlandsch Aardrijkskundig Genootschap.

KASIM, M.M., Habu WAHIDJI, Mansoer PATEDA, Husain JUNUS, and Nani TULOLI

- 1979 *Struktur bahasa Suwawa*. Gorontalo: Laporan Penelitian.

PATEDA, Mansoer

- 1977 *Kamus bahasa Gorontalo-Indonesia*. Jakarta: Pusat Pembinaan dan Pengembangan Bahasa.
- 1981 *Kaidah bahasa Gorontalo*. Gorontalo: Viladan.

SCHRÖDER, E.E.W.G.

- 1908 *Gorontalosche woordenlijst*. The Hague: M. Nijhoff.

