PROTO-GUTOB-REMO-GTAQ
STRESSED MONOSYLLABIC VOWELS AND INITIAL CONSONANTS

Richard C. DeArmond
Simon Fraser University

In this paper an attempt is made to determine part of the vocalic system of Proto-Gutob-Remo-Gtaq (PGRG), a reconstructed South Munda language presumably once spoken in Orissa Province of India.[1]

The study is limited to comparison of stressed monophthongs of the daughter languages. It is based on the vocalic system of Proto-Gutob-Remo (PGR) posited by Zide (1965), and the vowels systems in Zide (Ms), a lexical list of verbs and nouns collected by Kenneth Thern in 1963, Bhattacharya (1968), and Fernandez (1970). The study includes comparison of initial consonants.

Diphthongs are formally excluded from this study since known lexical correspondences containing at least one diphthong are fewer than lists in which monophthongs occur in all three daughter langauges, and show greater fluctuation. Another reason for excluding them is that the phonological nature of diphthongs is not well understood at present. Limitation of time has also required the comparison to be based on a small corpus.

The initial consonants present few problems. Save in the case of */s/ and */h/, correspondences are identical in all three daughter languages. There are no initial consonant clusters in Southern Munda

.er than those involving [j] and [w]. Sequences
[j] or [w] plus a vowel are here considered to
diphthongs, while [w] and [j] are regarded as
ıbers of the phonemes /u/ and /i/ respectively.
appears that initial /ń/, which is uncommon, is
·ived from /n+j/, where /n/ is an increment marking
·tain noun classes, as perhaps in the example
aq) /ńili/ 'bee', Remo /elem/ 'a bee' (*cf.* Hill-
ıo (Bondo) /ńilem/ < /n+jilem/ 'hive'?). The
ŧG root may be */elem/. The increment is syllabic
it precedes a stop in Gtaq: /n+dik/ 'the day
:ore yesterday' (see Zide 1965:48).

The initial consonants are shown in Figure 1.

p	t	č	k
b	d	ǰ	g
	s		
m	n		
	r		
	l		

Figure 1

The stops and the affricates may be distinguish-
by the feature [-continuant] from the continuant
/. /d/ is a retroflex stop [ḍ]. A dental /d/ may
cur but it is usually limited to foreign words,
ich are excluded from this study. However, /t/
a dental stop. PGRG */č/ is replaced by /s/ in
R before nonlabial vowels. Examples of initial
nsonant correspondences are shown in Table 1:

Gu	R	G
/bed/ 'give'	/bed/ 'give'	/bi?/ 'give'
/pig/ 'break'	/pug/ 'break'	/pag+či/ 'brea
/tag/~/tad/ 'trim'	/tag/ 'strip corn'	/tag-har/ 'wee
/del/ 'arrive'	/del/ 'arrive'	/de/ 'go'
/kib/ 'spill'	/kib/ 'spill'	/kig/ 'spill'
/gug/ 'strike (of a snake)'	/gug/ 'strike ...'	/gog/ 'strike ...'
/som/ 'eat'	/sum/ 'eat'	/čoŋ/ 'eat'
/ser/ 'sing'	/ser/ 'sing'	/sar/ 'sing'
/mag/ 'know'	/mag/ 'know'	/mia?/ 'know'
/niŋ/ 'I'	/niŋ/ 'I'	/neiŋ/ 'I'
/log/ 'fall'[2]	/log/ 'fall'	/lo?/ 'fall'
/riŋ/ 'bring'	/ruŋ/ 'take away'	/raŋ/ 'bring'
/ǰor/ 'descend'	/ǰor/ 'descend'	/ǰor/ 'descend
/ug/ 'cry'	/ug/ 'cry'	/ho?/ 'cry'
/sur/ 'dry'	/sur/ 'dry'	/n+suar/ 'be dried up'

An example of initial [w] (or [u]) is Gu /ui/ 'go', R /ui/ 'go', and G /ue/ 'go'. An alternate form of the verb stem in Remo is /i/. The fact that /ui/ does not reduplicate in Gutob indicates that the ver stem could be analyzed as polysyllabic. Polysyllabi stems do not reduplicate (DeArmond, forthcoming); this problem is excluded here. In Gtaq /h/ occurs before the monophthongs /u/, /o/, /ũ/, and /õ/, and before certain consonants, *e.g.*, /hni/ 'village'. Thern considers [h] to be an allophone of /?/, although Mahapatra and Zide (1972:181) consider it apparently to be a separate phoneme for reasons unknown at this time. From the scanty evidence now available, it appears that initial /h/ is lost before palatal vowels in Gtaq and everywhere in

o and Gutob.

The reconstruction of the vocalic system, on the er hand, is not so straightforward. There are six el phonemes in Gtaq:

i	u
e	o
ɛ	a

Figure 2

re are five vowel phonemes in Gutob and Remo:

i	u
e	o
a	

Figure 3

G /ɛ/ is phonetically [æ] or [æ̯e]. It corre-nds to /a/ Gutob and Remo, where it precedes a latal segment, *e.g.*, Gu /daʔj/ 'climb' (Zide con-ers /ʔj/ to be a unit phoneme, which he writes as '), R /day+ks/, G /dɛǰ/ 'climb'; Gu /baǹ/ 'send', bɛ/ (no corresponding form is known in Remo). erwise /ɛ/ is derived by Mahapatra and Zide from X/, where */X/ is some unknown segment, possibly aryngeal. Clearly, in some earlier stage of Gtaq ere was no phoneme */æ/.

Similarly, the nasal vowels are derived from a uence of an oral vowel plus a nasal segment under tain circumstances which are not known: Gu non/ 'stand', R /ton/ (< */tVnən/, Zide ms., 30), tuhũã/ *(see Mahapatra and Zide* 181); Gu /oŋ/ ear', R /oń/ (see Zide ms., 19), G /õ/. By internal construction, the nasal vowels may be eliminated

from the inventory of the earlier stage of Gtaq vowels. Thus, the five remaining vowels posited for this stage are compared to PGR.

For monophthongs there are seven sets of correspondences. These are shown in Table 2, which includes the PGR vowels reconstructed by Zide (1965)

	Gu	R	G	PGR
Ia	i	u	a	*y
b	i	u	e	
c	i	u	u	
II	i	i	i	*i
IIIa	e	e	e	*e
b	e	e	a	
IVa	u	u	o	*u
b	u	u	u	
V	o	o	o	*ə
VIa	o	u	u	*o
b	o	u	o	
VII	a	a	a	*a
VIII	e	e	i	

Table 2

The reconstruction of PGRG */a/ for correspondence VII presents no problems. In correspondence se II, /i/ occurs in all three languages: */i/ is therefore posited for this set. Examples of correspondence sets II and VII are given in Table 3:

Gu	R	G
/bad/ 'beat a drum'	/bad/ 'slap'	/ba/ 'strike'[3]
/dal/ 'cover'	/ran-dal/ 'put a cover on a fire'	/da/ 'cover'

Gu	R	G
ag/~/tad/ rim'	/tag/ 'strip corn'	/tag+har/ 'weed'
+gu?j/ 'wash'	---	/sag+we?/ 'clean'
ib/ 'spill'	/kib/ 'spill'	/kig/ 'spill'
ig+soŋ/ extinguish fire'	/ii+soŋ/ 'extinguish ...'	/iig+sue?/ 'extinguish ...'

Table 3

Correspondences IVa and IVb are in complementa- distribution. /o/ occurs in Gtaq before velars d in one lexical item before /r/. Otherwise /u/ curs in all three languages, including one lexical em where it occurs before /?r/ in Gtaq:

Gu	R	G
u?j/ 'hide'	/bug+wi/ 'hide'	/bu?+ri/ 'hide'
um/ 'drown'	---	/duŋ/ 'sink'
ur/ 'come out' /om+tur/ 'abandon)'	/on-tur/ 'leave, divorce'	/tor/ 'abandon'
ug/ 'hit'	/bug/ 'hit'	/bog/ 'hit'
ug/ 'strike of a snake)'	/gug/ 'strike ...'	/gog/ 'strike ...'
ug/ 'set of the sun)'	/lug/ 'set ...'	/log/ 'set ...'
utoŋ/ 'fear'	/butuŋ/ 'fear'	/boṭo/ 'fear'
-	/ug/ 'cry'	/hog/ 'cry'
g+suŋ+der/ story'	/u?+saram/ 'story'	/hu?+sra/ 'story'

Table 4

Although /r/ in Gtaq is the conditioning factor ich lowers certain vowels, in /bu?+ṛi/ the glottal op presumably prevents the lowering of /u/. *u/

is posited for correspondence set IV. It is not clear why *u/ would be lowered before velars, since velars are typically high (Chomsky and Halle 1968: 307), and dissimilation seems unlikely in this context. Again, the lack of precise phonetic informati hinders the attempt to explain the lowering of /u/ here, although there are languages in which vowels are lowered before /r/ and before /?/.[4]

In correspondence set III, /e/ occurs everywher in Gutob and Remo; but in Gtaq /a/ occurs before /r/ which tends to lower vowels, and /e/ occurs elsewher Thus *e/ is posited for correspondence set III. Examples of this set are given in Table 5:

Gu	R	Ge
/-ter/ 'shoulder' (CF)	---	/tar/ 'shoulder'
/ser/ 'sing'	/ser/ 'sing'	/sar/ 'sing'
/del/ 'arrive'	/del/ 'arrive'	/de/ 'go'
/gel/ 'worship'	/gel/ 'worship'	/ge/ 'worship'
/kel/ 'see (in songs)'	---	/ke/ 'see'

Table 5

So far, four vocalic phonemes have been posited for PGRG: *i/, *e/, *u/, and *a/. Four correspondence sets remain. The problem is to determine what the vocalic system of PGRG must have been. At least three solutions are possible:

(1)			(2)				(3)				
i		u	i	y		u	i			u	uX
e		o	e	ə		o	e	eX		o	oX
ɛ		ɔ	æ	a					a		
æ	a										

Figure 4

Although Zide (1965) proposes a solution for PGR
nilar to (2), he notes that an alternative system
ch overlaps with (1) and (2) may have existed in-
ead. Rather than *ə/ for correspondence V, he
its *ɔ/. This solution is asymmetrical. It is
ssible to claim the correctness of solution (1),
ch is symmetrical. However, the difficulty with
ution (1) arises with correspondence set I.
mples of this set are shown in Table 6:

Gu	R	G
g/ 'utter'	/dug/ 'utter'	/dag/ 'utter'
	/gub/ 'tie'	/gag/ 'tie'
g/ 'break'	/pug/ 'break'	/pag+či?/ 'break'
ŋ/ 'come'	/puŋ/ 'come'	/paŋ/ 'come'
ŋ/ 'take, ring'	/ruŋ/ 'take away'	/raŋ/ 'take, bring'
m+anno/ athe'	/kum+a(1)/ 'bathe'	/kum+a/ 'bathe'
l/ 'get unk'	/bu(1)/ 'get drunk'	/bu+sa?/ 'get drunk'

Table 6

In Gtaq /a/ occurs only before a voiced velar;
herwise /u/ occurs, as in Remo. If the system in
lution (1) is the correct system for PGRG, the
vel posited for this correspondence would have to
one of the front vowels, since the remaining
rrespondences show no front reflexes. Since the
jority of the phones for this set are high, a high
vel would have to be posited. It is possible to
sit *e/, but it would be difficult to explain how

/e/ is raised and simultaneously labialized in Remo, as it is in Gtaq except before voiced nasals, where it is centralized and lowered. This solution is ver unsatisfactory.

Some of the difficulties of solution (1) disappear in solution (2). Figure 6 represents the supposed development of the vowels in PGRG:

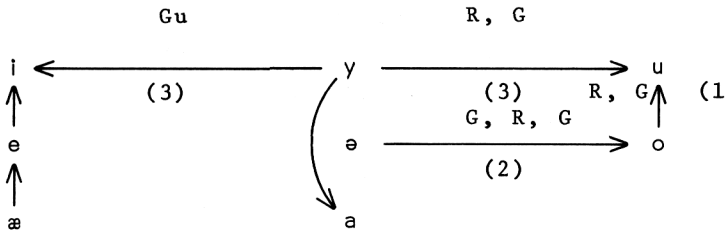

Figure 6

The numerals enclosed in parentheses indicate the chronological order of the sound changes. *\/o/ must be raised to /u/ in Gtaq and Remo before *\/ə/ is labialized (1), or the two phonemes would merge. Schwa-labialization (2) must precede the lowering of *\/y/ to /a/ in Gtaq, or it would be difficult to explain how *\/y/ does not merge with *\/ə/. *\/o/ is raised in Remo, but in Gtaq it is only known to be raised before *\/d/, *\/g/, and *\/r/, which is in contrast to the development in IVa. It is possible that *\/o/ was raised to *\/u/, and its failure to be lowered in the example in Table 7 could be an exception. The correct development of G *\/o/ is obscured by the insufficiency of examples.

Gu	R	G
/tor/ 'look for'	/tur/ 'look for'	/tur/ 'look fo
/sir bod/ 'pour'	/bud/ 'smoke'	/bu?/ 'smoke'

Gu	R	G
ɔg/ 'sweep'	/sug/ 'sweep'	/čo?+sa/ 'sweep', /čug/ 'wipe'
ɔŋ/ 'put'	/buŋ/ 'put'	/bo/ 'put'

Table 7

Although the raising of *ɔ/ raises no theoreti-
l issue, the labialization of */ə/ does. */ə/ is
sited for correspondence set V in solution (2).
amples of this correspondence set are listed in
ble 8:

Gu	R	G
ɔr/ 'descend'	/ǰor/ 'descend'	/ǰor/ 'descend'
ŋ/ 'hear'	/oŋ/ 'hear'	/õ/ 'hear'
ɔg/ 'stab'	---	/po?/ 'stab'
-	/roŋ/ 'dam (a stream)'	/rog/ 'stop' (?)
ɔ/ 'come on'	---	/do/ 'go'

Table 8

e rule accounting for the labialization of */ə/
uld be a context-free rule. The question is, how
es the vowel become labialized--since there is no
bial environment to condition the rule? David
ampe (personal communication) suggests that
bialization occurs in order that the vocalic
stem shift into one sustaining an opposition of
latal and labial vowels. Such systems appear to
more natural since they are the most common type
vocalic system. In this case labialization is
t a rule added to the end of the grammar, but one
ded to the underlying structure; it affects the
derlying relationship of the systematic vowel
onemes.

Stampe also maintains that the labialization of schwa must either occur simultaneously with the labialization of the high central vowel /ɣ/, or the labialization of /ɣ/ must precede the labialization of /ə/. However, the labialization of *ə in PGRG must precede the rules affecting *ɣ. *ɣ is lowered to a in Gtaq if it precedes a voiced velar. If *ə is not labialized, then *ɣ would merge with *ə when it is lowered. Since the labialization of central vowels in this case is a context-free rule, such a rule would have to follow the lowering of *ɣ. If labialization did occur first, the resultant phoneme *u would then lower and merge with *o. Another argument against solution (2) is that if the labialization of *ə did occur, it would apply to all three daughter languages, and the labialization of *ɣ should apply to all three daughter languages as well. However, the reflex in Gutob is the palatal vowel /i/.

The third solution posits a basic vowel system plus an additional feature of a following segment which conditions the development of the vowels. Zide (1965) dismisses the opposition of tense and lax vowels, noting that there is no evidence in Munda for such. On the other hand, he does present evidence that there may have been glottalized vowel in South Munda because of certain correspondences between Proto-Sora-Gorum (PSG) and PGR. He now considers glottalization to be some unknown segment /X/, which may have been a laryngeal, or possibly a pharyngeal.[5] The correspondences he notes are the following:

GR	PSG	South Munda
'y/	*u(X)/	*uX/
'ə/	*A(X)/	*əX/

Figure 7

Although Zide posits *əX/ for South Munda, the guments against */ə/ obtain, and *oX/ is proposed its place. In the palatal series of vowels, three rrespondences occur. Two of these correspondence ts are discussed above. In correspondence set VIII, / occurs in Gutob and Remo, but /i/ occurs in Gtaq:

Gu	R	G
əm/ 'do'	/dem/ 'do'	/diŋ/ 'do'
əb/ 'heat'	/geb/ 'heat'	/gi?/ 'heat'
ən/ 'pick up'	/len/ 'thresh'	/liŋ/ 'lift'
əd/ 'give'	/bed/ 'give'	/bi?/ 'give'
əb/ 'slaughter'	/seb/ 'sacrifice'	/si?/ 'sacrifice'

Table 9

Although *eX/ is posited as a PGRG phoneme, e question is whether *eX/ underlies correspondence t VIII. If *X/ is a pharyngeal or laryngeal possibly even a glottal segment or feature, it uld be marked by the feature [+low] (Chomsky and lle 1968: 305-307). It is highly unlikely that a wel would be raised in the environment of the ature low. On the other hand it is not uncommon r peripheral vowels to be raised. Thus *eX/ is sited for correspondence set III (in which /e/ curs in the daughter languages, except in Gtaq ere /a/ occurs before /r/), and */e/ is posited r correspondence set VIII. Similarly in the labial wels, *oX/ is posited for correspondence set V

(in which /o/ occurs in the daughter languages), and *o/ is posited for correspondence set VI (where *o is raised to /u/ in Remo and under certain condition in Gtaq). In solution (3), Figure 4, a gap occurs in the system, in that no segment *i/ is posited. There is no evidence available to me at this time to justify such a phoneme, although it is likely that *i/ existed in PGRG. It is not improbable that the reflex of the phoneme would be /i/ in the daughter languages, thus merging with *i/. Perhaps study of the diphthongs may shed light on this hypothesis. Similarly, *a/ may have existed.

The development of the PGRG vowels is shown diagrammatically in Figure 8:

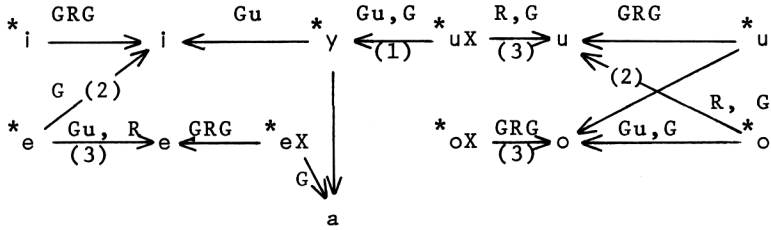

Figure 8

The first chronologically established rule is the delabialization of */uX/[6] in Gutob and before voiced nasals in Gtaq (this is represented by (1) in Figure 8). The raising of *o/ to /u/ in Remo and Gtaq, and *e/ to /i/ in Gtaq followed (2). The relative sequencing of the lowering of *eX/ to /a/ and *u/ to /o/ cannot be ascertained, but the lowering of *eX/ must precede the deletion of */X/, since *e/ is not lowered. The fronting of *y/ to /i/ in Gutob and its lowering to /a/ in Gtaq obviously must follow the delabialization of */uX/, but its ordering with the remaining rules is

nown. The deletion of *$/X/$ follows the raising *$/o/$ and *$/e/$.

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[1] I am grateful to Norman Zide, Kenneth Thern, and id Stampe for their useful comments on this paper.

[2] In Gutob /lo?j/ occurs as an irregular allomorph the stem /log/.

[3] Root final consonants are not reconstructed ause of lack of sufficient morphophonemic data Gtaq. References to them are nevertheless made eafter.

[4] David Stampe points out that in some American lish dialects, /ū/ is lowered to /ō/ before /r/, ., *poor, door, whore*. On the other hand, in most -Eastern dialects: /æ/ is raised to /e/ before ; *e.g., carry, Harry, carriage, hare*. This gests that the American /r/ occurs on an axis ghly from the high palatal part of the oral ity to the low back part. In other words, high ial and low palatal vowels are highly marked ore /r/. The phoneme /r/ may be tied to the netic feature of tongue-root position (see note 5).

[5] An alternative solution is that there was no neme */X/; the vowels could have been distinguish- by the feature of tongue-root position (TRP). gerson in a paper in this collection argues vincingly that the tongue root is advanced in the st (voice) register in the Mon-Khmer languages. s feature may have been an Austroasiatic feature ch Proto-Munda inherited. If so, this feature ld explain the lowering of */uX/. It could also lain why the voiced stop is retroflex as opposed the voiceless stop, which is dental. As voicing correlated to the retracted TRP, the voiced stop articulated farther back in the oral cavity. s would also explain the tendency for certain els to become lower before voiced stops. derson also suggests that /r/ is correlated with retracted TRP. This would explain the tendency Gtaq for vowels to become lower before /r/. only argument against TRP as a vocalic feature the fact that both voiced and voiceless consonants ur in PGRG before both types of vowels. Voicing, stated above, is correlated with the retracted . If voicing was not a distinctive feature in troasiatic, then some explanation for the arently independent source of voicing in Munda

is necessary before TRP can be reasonably posited for PGRG and Proto-Munda vowels.

[6]For example, in Slavic */ū/ was delabialized, Czech */ü/ was delabialized, and English */ö/ and */ü/ were delabialized; see also King (1969). In Gutob and Gtaq delabialization is conditioned by the following */X/.

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