

# *The Saluan-Banggai microgroup of eastern Sulawesi*

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## 1 Introduction

In this paper, I focus on five languages of eastern Sulawesi, namely Saluan, Bobongko, Andio, Balantak and Banggai (see Map 1). Saluan, Balantak and Banggai are relatively well-known languages, each spoken by some thousands of speakers, while Bobongko and Andio are smaller, sometimes overlooked languages spoken in small enclaves.

In the 19<sup>th</sup> century and into the 20<sup>th</sup>, it was usual for the Saluan language to be referred to as Loinan (also spelled Luinan, Loinang, or Loindang). Because Loinan carries certain negative connotations, in recent decades this term has given way to Saluan. Loinan and its variants, and later Saluan, have *also* been used to refer to the group which includes Saluan proper, Balantak, and (when recognised) Bobongko and Andio. Researchers, however, have differed regarding the position of Banggai: some have included it within this group, but others have excluded it. The term 'Saluan' is thus doubly ambiguous, referring either to a single language or a group of languages, which group may or may not include Banggai. To resolve this ambiguity, I use 'Saluan' solely for the language, and 'Saluan-Banggai' when referring to the group.<sup>1</sup>

I thus fall on the side of those who include Banggai in a grouping with Saluan, Bobongko, Andio and Balantak. I base this conclusion on evidence from historical sound change.

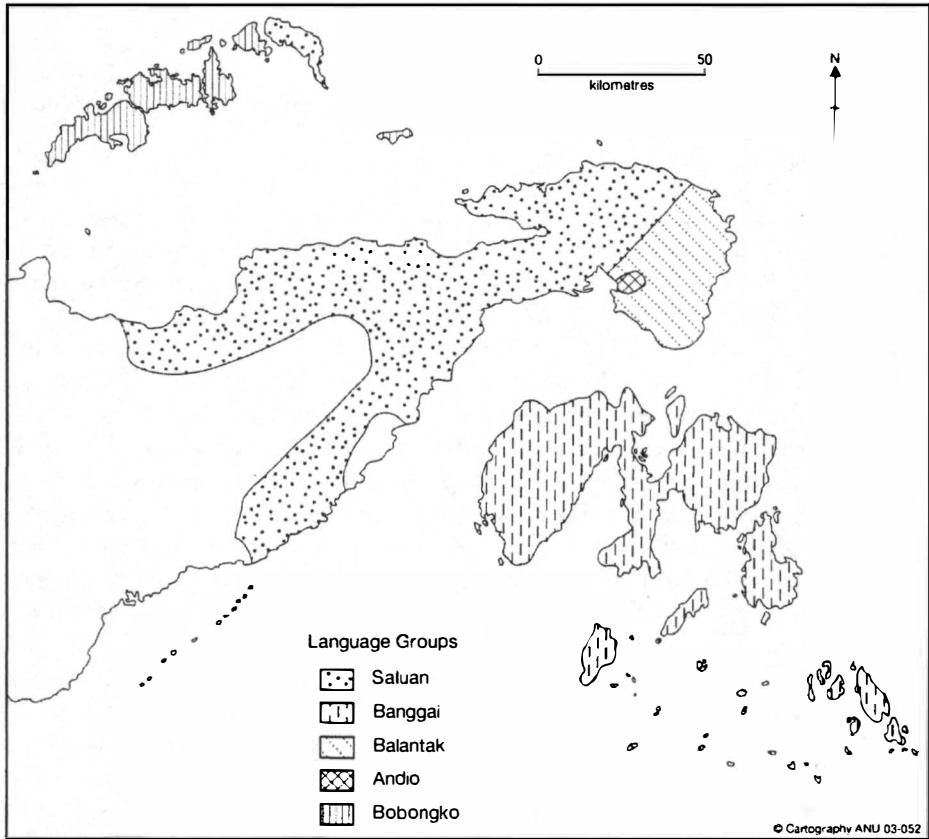
All told, there are twelve sound changes which distinguish Saluan, Bobongko, Andio and Balantak from their Proto Malayo-Polynesian ancestor. Together these changes constitute our best evidence for grouping these four languages into a single microgroup, that is to say a set of languages which share a relatively immediate common ancestor, and which are more closely related to each other than to any surrounding language. At the same time, however, these same twelve changes are also exhibited in Banggai, which perforce must be included in

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<sup>1</sup> Another reason for not using 'Saluan' as the group label is that Banggai is the largest and most prestigious of the five languages. Formerly the Banggai held sway over the Saluan and Balantak regions and not the other way around, a fact reflected, for example, in that the administrative area where Saluan and Balantak are spoken is named the Banggai Regency.

any such group. Furthermore, within this group Banggai and Balantak share in two further changes, and in our picture of internal subgrouping these two languages must stand together against a western group composed of Saluan, Bobongko and Andio.

Section 2 discusses previous classifications of the Saluan-Banggai languages. Section 3 lays out the twelve sound changes exhibited by all five Saluan-Banggai languages. Section 4 describes additional sound changes, some of which are exhibited by two or more languages, but none of which is found in all five languages. The implications which these changes have for subgrouping are addressed in §5.



**Map 1:** The Saluan-Banggai languages

## 2 Previous classifications of the languages of eastern Sulawesi

In Nicolaus Adriani's seminal work on the language situation of Sulawesi (Adriani & Kruyt 1914), the Loinan language family was presented as consisting of four languages: the Bobongko language spoken on the north coast of Togian Island, the Loinan and Balantak

languages spoken on the mainland of the eastern arm of Sulawesi, and the Banggai language spoken in the nearby archipelago of the same name just to the south.<sup>2</sup>

Unknown to Adriani was the small Andio language, spoken today by about 1700 people in two villages in an otherwise Balantak-speaking area. Although this language came to the attention of linguists two decades ago, through unfortunate circumstances<sup>3</sup> both Barr and Barr (1979) and Sneddon (1983) initially equated this isolect with the Bobongko language spoken in the Togian Islands. Later Bobongko and Andio word lists appeared together in an Indonesian publication (Wumbu et al. 1986), which made it clear that these were different languages, but it remained for Noorduyn (1991a:103, 1991b:140) to bring this to the attention of outside scholars. The affiliation of Andio with Saluan, Bobongko and Balantak has never been questioned.

This is not true of Banggai. Even prior to Adriani, Brandes (1894) had used two primary criteria — the presence/absence of tensed verbs and the so-called reversed genitive (see below) — to classify languages of Sulawesi, and by these criteria Banggai and Saluan fell into separate language families. Although Adriani argued against using either criterion to classify languages (Adriani & Kruyt 1914:284ff., see also Noorduyn 1991b:142), nonetheless Adriani's reasons *for* choosing a particular classification were often impressionistic, leaving subsequent researchers to bolster his claims, or in some cases dispute them. Already by 1938, Adriani's understudy and colleague Esser had given Banggai a position coordinate to his Loinang group, while Salzner (1960), who generally followed Esser in regard to Sulawesi languages, removed Banggai completely from it.<sup>4</sup> Similarly, when Sneddon (1983) compiled his language map of Sulawesi, he placed Banggai as a group-level isolate within his Central Sulawesi supergroup. Later in a discussion concerning Sulawesi microgroups he commented simply, 'Banggai appears to be sufficiently different from other Sulawesi languages to deserve independent status' (Sneddon 1993:2).

The divergent position of Banggai has been confirmed by recent lexicostatistical comparisons in Barr and Barr (1979), Kaseng et al. (1979) and Lauder et al. (2000). According to the Barrs' calculations, for example, while Banggai indeed scored highest in lexical similarity with Saluan (47%), Andio (48%) and Balantak (51%) — compare this to a range from 35 to 45% lexical similarity with all other Central Sulawesi languages — nevertheless, they considered these scores low enough to place Banggai in its own group. My own calculations, based on a comparison of 206 items and displayed in Figure 1, produced lexical similarity scores for Banggai roughly ten percentage points across the board even *lower* than those calculated by the Barrs (Bobongko was not included in their comparison).

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- 2 In some 19<sup>th</sup> century writings one also reads of a Mandono or Mondonu language belonging to this group. The postulation of a Mandono language distinct from Saluan, spoken on the coast opposite Peleng Island, apparently originated with Riedel (1868:44, fn.8). I take the position, also adopted by Holle (1894) and Brandes (1894), that Mandono referred either to a dialect of Saluan or some portion of the Saluan-speaking area. The origin of the term Mandono, and whether it is still used locally today, is a matter for further investigation.
  - 3 First, as reported by Barr and Barr (1979:36), an alternative (but derogatory) name for the Andio language is Bobongko. Second, in the guide to his language map of Sulawesi, Adriani listed the negative term for Bobongko as *andioo* (Adriani & Kruyt 1914:352).
  - 4 Salzner's (1960:14) inclusion, on the other hand, of certain Bajau dialects in his Saluan group can only be regarded as an egregious error.

Bobongko				
53	Saluan			
44	62	Andio		
39	51	66	Balantak	
31	37	37	41	Banggai

Figure 1: Saluan-Banggai lexical similarity matrix

Besides word stock, another oft-cited divergent feature of Banggai is that — unlike other languages of Sulawesi, but like many languages of the Maluku — Banggai speakers make use of the so-called ‘reversed’ or preposed genitive construction. Compare for example the following expressions for ‘the hand (*lima*) of the man (*mian*)’. As noted by Adriani, Banggai actually has three distinct genitive constructions; in all three the possessor precedes the possessum.

- Bobongko: *limanu mian*  
 Saluan: *limanu mian*  
 Andio: *limanu mian*  
 Balantak: *limana mian*  
 Banggai: *mian limano, miano limano, miano lima*

Similarly, Banggai speakers also make use of possessed classifiers which precede the possessum, as in *konggu bonua* ‘my house’; compare Saluan *bonuangku*, in which the possessive suffix *-ngku* directly follows the possessed noun *bonua* ‘house’. Although Adriani downplayed these features as a basis for subgrouping, nonetheless there have been intimations that on such grounds Banggai should be grouped with languages further east (Kanski & Kasprusch 1931).

As I argue below, however, Banggai is a Sulawesi language, and a member of the Saluan-Banggai microgroup. In fact from a consideration of shared sound changes, the primary split of the Saluan group must be between an eastern group composed of Balantak and Banggai on one hand, and a western group comprising Bobongko, Saluan and Andio on the other.

### 3 Sound changes shared by the Saluan-Banggai languages

In all, present data<sup>5</sup> allow us to reconstruct twelve sound changes which distinguish all five Saluan-Banggai languages from their known common ancestor, Proto Malayo-

<sup>5</sup> My information about Bobongko comes from my own field notes (Mead in press and in preparation). For Balantak, I consulted a prepublication copy of the *Kamus Balantak-Indonesia-Inggeris* (Balantak-Indonesian-English Dictionary), which is to be published locally in the Balantak area (Bradbury in press). For Banggai I consulted van den Bergh’s (1953) *Spraakkunst van het Banggais* (Grammar of Banggai), which also contains a twenty-two page lexicon.

Information about Saluan and Andio was harder to obtain. For word stock I have relied primarily on 488-item word lists collected by Robert Busenitz. His one Andio word list and four Saluan lists were used in a lexicostatistical comparison (Busenitz 1991), but the lists themselves were never published. Robert Brown (2001: pers.comm.) provided me with a similar list for the Saluan isolect spoken in the interior village of Simpang, along with an overview of Saluan dialects. Erik Zobel (2002: pers.comm.) shared notes on Saluan phonology and grammar, for which I am particularly indebted in regard to long vowel reflexes of final *\*R* and *\*j*.

Polynesian (PMP). These twelve changes are presented and discussed in turn in the following subsections. Collectively they are our best evidence for establishing, on the basis of historical sound change, a close link between Saluan, Bobongko, Andio and Balantak. On the same evidence, though, Banggai must also be admitted as a member of this group.

### 3.1 Reduction of consonant clusters

PMP consonant clusters, other than a nasal plus a following consonant, were reduced in Saluan-Banggai languages via loss of the first consonant of the cluster. Sequences of nasal plus stop were retained, with the nasal assimilating to the point of articulation of the following stop (if it had a different point of articulation). In Table 1, as throughout this paper, non-cognate forms are underlined, while a dash (—) simply indicates a lack of data. For false cognates, which result from borrowing, I also give the source language, either Pamona (<Pam) or Gorontalic (<Gtl). Metathesis is indicated by (<met.). Language abbreviations are Bgg = Banggai, Bal = Balantak, And = Andio, Sal = Saluan and Bbk = Bobongko.

Table 1: Reflexes of PMP consonant clusters

	'forge' <i>*tuktuk</i>	'suck' <i>*sepsep</i>	'rub' <i>*gisgis</i>	'dark' <i>*demdem</i>	'horn' <i>*tanduk</i>
Bgg	<i>tutuk</i>	<i>sosop</i>	—	<i>londom/i</i>	<i>tanduk</i>
Bal	<i>tutuk</i>	<i>sosop</i>	<i>geges</i>	<i>rondom</i>	<i>tanduk</i>
And	—	—	<i>geges</i>	—	<i>tanduk</i>
Sal	—	<i>sosop</i>	<i>geges/i</i>	—	<i>tanduk</i>
Bbk	—	<i>sosop/i</i>	<i>geges</i>	<u><i>morikoyom</i></u>	<u><i>tondu</i></u> (<Pam)

### 3.2 Loss of PMP \*h

PMP \*h is invariably reflected as zero in all Saluan-Banggai languages.

Table 2: Reflexes of PMP \*h

	'fish gills' <i>*hasanɣ</i>	'head hair' <i>*buhuk</i>	'two' <i>*duha</i>	'old' <i>*tuqah</i>
Bgg	—	<i>buuk</i>	<i>lua</i>	<u><i>langkai</i></u>
Bal	<i>ansang</i>	<i>wuuk</i>	<i>rua?</i>	<i>tu<sup>?</sup>a</i>
And	<i>ansang</i>	<u><i>ulu</i></u>	<i>rua?</i>	<i>tu<sup>?</sup>a</i>
Sal	<i>ansang</i>	<u><i>ubak</i></u>	<i>o/hua?</i>	<i>tu<sup>?</sup>a</i>
Bbk	<i>ansang</i>	<u><i>bulu</i></u>	<u><i>doluo</i></u> (<Gtl)	<u><i>langkai?</i></u>

Other sources of information on these languages consist of a brief description of Bobongko word stock (Adriani 1900), a Saluan text with grammar notes (Gobée 1929), a Banggai Holle word list (Stokhof 1985:265–278), a Balantak Holle word list (mislabelled as Banggai) (Stokhof 1985:251–263), and the several lists published in Barr and Barr (1979), Wumbu et al. (1986), and Lauder et al. (2000). I have used these other sources sparingly and with caution because of their frequent errors in transcription, especially regarding vowel quality, vowel length, and glottal stop in word-final position.

### 3.3 Merger of PMP \*d, \*D and \*r

Although the status of \*d as a valid PMP phoneme is not in doubt, both \*D and \*r have come under question. There is no evidence from Saluan languages that these were distinct protophonemes, as all three (if there were three) became \*r in the ancestor to the Saluan languages (but remained \*d when immediately preceded by a nasal; see Table 1 above). This protophoneme is still reflected as *r* in Bobongko, Andio, and Balantak, but via subsequent changes it became *l* in Banggai and *h* in Saluan (zero in final position).<sup>6</sup>

PMP \*z is also a questionable protophoneme. In one known case PMP \*z appears to have merged with \*d/D/r; in a second case mentioned in §4.5, \*z is reflected the same as PMP \*Z.

Table 3: Reflexes of PMP \*d/D/r

	'near' *zani	'hear' *DeNeR	'leaf' *Dahun	'two' *duha	'scratch' *karut
Bgg	<i>lo/lani</i>	<i>longol</i>	<i>loon</i>	<i>lua</i>	—
Bal	<i>ka/rani?</i>	<i>rongor</i>	<i>roon</i>	<i>rua?</i>	<i>karut</i>
And	<i>a/rani</i>	<i>rongo</i>	<i>roon</i>	<i>rua?</i>	<i>karut</i>
Sal	<i>o/hani</i>	<i>hongoo, hongoo</i>	<i>hoon</i>	<i>ohua?</i>	<i>kahut</i>
Bbk	<i>i/rani</i>	<i>rongo</i>	<i>ron</i>	<i>doluo</i> (<Gtl)	<i>karut</i>
	'side' *birin	'prawn' *qudan	'sew thatch' *pawed	'tree stump' *tuqeD	'knee' *tuhud
Bgg	—	—	<i>paul</i>	<i>tuul</i>	<i>tuul</i>
Bal	<i>biring</i>	<i>urang</i>	<i>paur</i>	<i>tu<sup>2</sup>or</i>	<i>tuur</i>
And	<i>biring</i> 'ear'	—	—	—	<i>utur</i> (<met.)
Sal	<i>bihing</i> 'ear'	<i>uhang</i>	<i>pawot</i> (<Gtl)	<i>tu<sup>2</sup>o</i>	<i>buku</i>
Bbk	<i>biring</i> 'ear'	<i>gale</i>	—	—	<i>buku</i>

### 3.4 Monophthongisation of PMP \*-ay and \*-ey

PMP final diphthongs \*-ay and \*-ey are consistently reflected as *e* in modern Saluan languages (see §4.2 regarding reflexes of PMP \*-uy).

Table 4: Reflexes of PMP \*-ay, \*-ey

	'chin' *qaZay	'use' *pakay	'die' *patey	'liver' *atey	'paddle' *beRsay
Bgg	<i>ade</i>	<i>pake</i>	<i>mate</i>	<i>ate</i>	<i>bose, bosi</i>
Bal	<i>asi</i>	<i>pake</i>	<i>pate</i>	<i>ate</i>	<i>bose</i>
And	<i>ade</i>	—	<i>mate</i>	<i>ate</i>	<i>bose</i>
Sal	<i>aje</i>	—	<i>mate</i>	<i>ate</i>	<i>bose</i>
Bbk	<i>aje</i>	<i>pake</i>	<i>mate</i>	<i>ate</i>	<i>bose</i>

<sup>6</sup> I am aware of a single datum which suggests that some Saluan dialects might have retained final /h/ in some contexts, namely the recording of *sanggo* 'name' by Brown (1988:1) (compare Bobongko and Andio *sanggor* 'name' with final *r*). A word list from the same village thirteen years later, however, gives only *sanggo* 'name'.

### 3.5 Monophthongisation of PMP \*-aw and \*-ew

In a parallel change, PMP \*-aw was monophthongised and is reflected as *o* in all Saluan languages. On scant evidence, the same apparently could be said of PMP \*-ew.

**Table 5:** Reflexes of PMP \*-aw, \*-ew

	'clear (water) PPh *linaw	'above' *babaw	'rafter' *kasaw	'odour, stink' *behew
Bgg	<i>mo/lino</i>	<i>babo</i>	<i>kaso</i>	<i>boo</i>
Bal	<i>mo/lino</i>	<i>wawo</i>	<i>kaso</i>	<i>woo</i>
And	—	<i>babo</i>	<i>kaso?</i>	—
Sal	—	<i>bawo</i>	<i>kaso?</i>	—
Bbk	<i>mo/lino</i>	<i>bafo</i>	<i>kaso?</i>	—

### 3.6 PMP \*j > \*y

PMP \*j is reconstructed only in medial and final position. It is thought to have been a voiced velar fricative or palatalised velar stop (Blust 1990; Ross 1992). It became \*y in a language ancestral to the Saluan-Banggai languages. It is still reflected as *y* in Banggai, but further weakened in the other languages.

**Table 6:** Reflexes of PMP \*j

	'sun' *qalejaw	'sniff' *hajek	'navel' *pusej	'snake, worm' *ulej
Bgg	<i>oloyo</i>	<i>oyok/i</i> 'kiss'	<i>pusoy</i>	<i>uloy</i>
Bal	<i>ilio</i>	<i>ook</i>	<i>puse</i>	<i>ule</i>
And	<i>sina</i>	<i>ook</i>	<i>puse</i>	<i>ulo</i>
Sal	<i>sina, sinaa</i>	<i>ook</i>	<i>puso, pusoo</i>	<i>ulo, uloo</i>
Bbk	<i>dolag</i>	<i>ook</i>	<i>puso</i>	<i>bintana?</i>

A fuller set of data is considered in §4.2, where reflexes of PMP \*j are taken up again. On the basis of counteradditive reasoning, the change PMP \*j > \*y must have occurred after the monophthongisation of PMP \*-aj and \*-ej > \*-e (see §3.4).

### 3.7 PMP \*e > \*o

PMP \*e is regarded as having been a mid central vowel (schwa). It is regularly reflected as the back rounded vowel *o* in all Saluan languages.

**Table 7:** Reflexes of PMP \*e

	'brain' *utek	'deaf' *benel	'low tide' *eti	'roofing thatch' *qatep
Bgg	—	<i>bongol</i>	<i>o/oti</i>	—
Bal	<i>utok</i>	<i>bongol</i>	<i>mo/oti</i>	<i>atop</i>
And	<i>utok</i>	<i>bongol</i>	—	<i>atop</i>
Sal	<i>utok</i>	<i>bongol</i>	<i>mong/oti</i>	<i>atop</i>
Bbk	<i>utok</i>	<i>bongol</i>	<i>mo/oti</i>	<i>atop</i>

### 3.8 Lowering of PMP \*i preceding final \*q

PMP \*i was lowered to \*e (mid front vowel) preceding final \*q. A parallel lowering of \*u before final \*q also occurred, but only in Banggai and Balantak; see §4.1.

**Table 8:** Reflexes of PMP \*-iq

	'choose' *piliq	'white' *ma-putiq	'seedling' *binehiq
Bgg	<i>ile/i</i>	<i>moute</i>	—
Bal	<i>ruruki</i>	<i>mobulak</i>	<i>wine?</i>
And	<i>pile?/i</i>	<i>mobulak</i>	<i>bine?</i>
Sal	<i>pile?/i</i>	<i>mopute?</i>	<i>bine?</i>
Bbk	<i>pile?/i</i>	<i>mopute?</i>	<i>bine?</i>

### 3.9 Raising of PMP antepenultimate \*a

PMP \*a in antepenultimate position is reflected as *o* in all Saluan languages.

**Table 9:** Reflexes of PMP antepenultimate \*a

	'fingernail' *kanuhkuh	'bat' *paniki	'gall, bile' *qapeju	'ginger' *laqia	'spouse' *qasawa
Bgg	—	<i>uniki</i>	<i>sopot</i>	—	<i>osoa/an</i> 'to marry'
Bal	<i>ngurun</i>	<i>poniki?</i>	<i>(s)opoyu?</i>	<i>loiya?</i>	<i>samba-samba</i>
And	<i>konuku</i>	—	<i>poyu?</i>	<i>loiya?</i>	—
Sal	<i>konuku</i>	<i>poniki?</i>	<i>pou?</i>	<i>loiya?</i>	<i>osoa</i>
Bbk	<i>koñuku</i>	<i>raupa</i>	<i>opou?</i>	<i>moinit</i>	<i>osoa</i>

### 3.10 PMP \*-awa- > \*-oa-

The sequence \*-awa- is reflected as *oa* in all Saluan languages.

**Table 10:** Reflexes of PMP \*-awa-

	'spider' *lawaq	'breathe' *ñawa	'laugh' *tawa	'spouse' *qasawa
Bgg	<i>loa</i>	<i>noa</i>	<i>kokumbit</i>	<i>soa</i>
Bal	<i>loa?</i>	<i>mi/noa</i>	<i>to/toa</i>	<i>samba-samba</i>
And	<i>loa?</i>	—	<i>molomi</i>	—
Sal	<i>loa?</i>	<i>miki/ñoa</i>	<i>kumojo, kumojoo</i>	<i>osoa</i>
Bbk	<i>loa?</i>	<i>mingusa</i>	<i>gumeleng</i>	<i>osoa</i>



Otherwise PMP \*w was retained in Balantak, and therefore could not have been lost in Proto Saluan-Banggai: note here Balantak *walu* ‘eight’ (< PMP \*walu), *wani?* ‘bee’ (< PMP \*wañi) and *wiwik* ‘swing legs or fidget with feet while seated or lying down’ (cf. PPh \*wigwig ‘shake’).<sup>7</sup>

### 3.11 Devoicing of final stops

Although PMP \*d/D became \*r in final position (§4.3), there is evidence that the other PMP voiced stops, \*b and \*g, were devoiced word-finally. Devoicing of final stops is only weakly attested by the available data, which is limited to one nearly complete cognate set for PMP \*b, and two partial cognate sets for PMP \*g. However, I am not aware of any counterexamples to this claim either.<sup>8</sup>

Table 11: Reflexes of PMP \*-b, \*-g

	‘yawn’ *huab	‘current’ *seleg	‘shake’ PWMP *wigwig
Bgg	—	<i>solok</i>	—
Bal	<i>ming/oap</i>	<i>solok</i>	<i>wiwik</i> ‘dangle’
And	<i>ming/oap</i>	—	—
Sal	<i>um/oap</i>	—	—
Bbk	<i>ming/oap</i>	—	—

Since presently neither Balantak nor Banggai allow voiced stops in word-final position (Busenitz & Busenitz 1991:31; van den Bergh 1953:13) — Adriani also makes this claim for Saluan (Adriani & Kruyt 1914:83) — it stands to reason that PMP final voiced stops must have been lost via some process in these languages.<sup>9</sup>

### 3.12 PMP \*q > glottal stop

It appears that PMP \*q became glottal stop in a language ancestral to the Saluan-Banggai languages. Word-medially and -finally it is reflected as glottal stop in all languages except

<sup>7</sup> PMP \*w is retained as *u* in Balantak *uanan* ‘right’ (PMP \*wanan), *kauri* ‘left’ (PMP \*wiRi) and *uate?*, *mondulate?* ‘earthworm’ (cf. PMP \*wati). Banggai has no bilabial approximant (or for that matter bilabial fricative) in its phoneme inventory (van den Bergh 1953). Banggai *alu* ‘eight’ suggests PMP \*w > Ø, but I have no other examples to confirm this as a pattern. Bobongko has only recently regained a bilabial approximant through borrowing (Mead in press), but Bobongko and Saluan both retain PMP \*w through resegmentation to *u*, at least in initial position; compare Bobongko *ualu*, Saluan *ualu?* ‘eight’ (< PMP \*walu), Bobongko, Saluan *uani?* ‘bee’ (< PMP \*wañi). The Saluan terms for ‘right’ and ‘left’ given by Gobée (1929:199) are *koanan* and *koi* (thus with loss of \*w from PMP \*wanan and \*wiRi), but Busenitz records the latter term as *kowi*, *kewe?*.

<sup>8</sup> Bobongko has *tingkod* ‘heel’ (PMP \*tiked), but I consider this to be a later borrowing from Gorontalo. The inherited reflex is to be seen in Bobongko, Andio *tengker* ‘foot’, Saluan *tengke*.

<sup>9</sup> Even in Bobongko where voiced stops occur in word-final position, a majority can be attributed to borrowing from Gorontalo (Mead in progress). See further §4.3 and footnotes 8 and 14.

Banggai, which does not have a glottal stop phoneme<sup>10</sup> and which reflects PMP \*q as zero. Although one could say that word-initial \*q was lost in all Saluan languages, more correctly it merged with the phonetic glottal stop which appears preceding vowel-initial stems. For example, van den Bergh (1953:12) writes about Banggai ‘de hamza staat aan het begin van eider open aanvangend woord, maar wordt daar nooit geschreven’ (glottal stop stands at the beginning of every vowel-initial word, even though it is never written there). Likewise Busenitz and Busenitz (1991:34) claim for Balantak that ‘initial vowels may optionally be preceded by a glottal stop — in these instances the glottal stop is non-phonemic’. Following my sources, I do not write glottal stop in initial position.

Table 12: Reflexes of PMP \*q

	‘rain’ *quZan	‘scale (of fish)’ *qunap	‘thigh’ *paqa	‘trunk’ *puqun	‘earth’ *taneq
Bgg	<i>udan</i>	—	—	<i>uu</i>	<i>tano</i>
Bal	<i>usan</i>	<i>unap</i>	<i>paʔa</i>	<i>puʔun</i>	<i>tanoʔ</i>
And	<i>udan</i>	<i>unap</i>	<i>paʔa</i>	<i>puʔu</i>	<i>tanoʔ</i>
Sal	<i>ujan</i>	<i>sonuku</i>	<i>paʔa</i>	<i>puʔun</i>	<i>tanoʔ</i>
Bbk	<i>ujan</i>	<i>unap</i>	<i>paʔa</i>	<i>puʔun</i>	<i>tanoʔ</i>

In two cases, PMP \*q appears to have been lost in all languages: in reflexes of \*laqia ‘ginger’ (see below Table 14 and the related discussion); and in reflexes of \*taqun ‘year’ — compare Banggai *taum*, Balantak, Saluan and Andio *taun* (Bobongko has *toʔu*, presumably borrowed from Pamona, which has an identical form).

In some cases, Balantak, Andio, Saluan and/or Bobongko have glottal stop in final position where no \*q (or other consonant) is reconstructed in the corresponding PMP etymon. A final glottal stop in such forms must be regarded as an addition, even if the reasons for this addition remain obscure. One of the most striking examples of this is found in the numerals, where Saluan, Andio and Balantak have added a final glottal stop to all numbers which formerly ended in a vowel (conversely, Bobongko has even lost final glottal stop from the number ‘ten’ where it would be expected to occur). Numerals for all languages are shown in Table 13.

Table 13: Reflexes of PMP numerals

PMP	Bobongko	Saluan	Andio	Balantak	Banggai	
*esa	<i>sambaʔan</i>	<i>isaʔ</i>	<i>isaʔ</i>	<i>isaʔ</i>	<i>meeng</i>	‘one’
*duha	<i>doluo</i> (<Gtl)	<i>ohuaʔ</i>	<i>ruaʔ</i>	<i>ruaʔ</i>	<i>lua</i>	‘two’
*telu	<i>totolu</i>	<i>totoluʔ</i>	<i>toluʔ</i>	<i>toluʔ</i>	<i>tolu</i>	‘three’
*epat	<i>opat</i>	<i>opat</i>	<i>paat</i>	<i>paat</i>	<i>sangkap</i>	‘four’
*lima	<i>olima</i>	<i>olimaʔ</i>	<i>limaʔ</i>	<i>limaʔ</i>	<i>lima</i>	‘five’
*enem	<i>onom</i>	<i>anom</i>	<i>noom</i>	<i>noom</i>	<i>noom</i>	‘six’
*pitu	<i>pitu</i>	<i>popituʔ</i>	<i>pituʔ</i>	<i>pituʔ</i>	<i>pitu</i>	‘seven’
*walu	<i>ualu</i>	<i>ualuʔ</i>	<i>waluʔ</i>	<i>waluʔ</i>	<i>alu</i>	‘eight’
*siua	<i>sio</i>	<i>osioʔ</i>	<i>sioʔ</i>	<i>sioʔ</i>	<i>sio</i>	‘nine’
*puluq	<i>sampulu</i>	<i>sampuluʔ</i>	<i>sompuluʔ</i>	<i>sompuloʔ</i>	<i>songulo</i>	‘ten’

<sup>10</sup> Except as a variant enunciation of the phoneme *k*. In the West Peleng dialect the phoneme *k* is mostly articulated as glottal stop, compare *loʔa* ‘banana’ (elsewhere in Banggai *loka*), *baʔoʔo* ‘machete’ (elsewhere

In the numerals and in many other cases, it would seem reasonable to consider the addition of final glottal stop to have occurred as a more recent process; that is, no final glottal stop is to be reconstructed at the level of their common ancestor. On the other hand, Table 14 lists some of the forms known to me where, if anywhere, a final glottal stop might be attributed to Proto Saluan-Banggai.<sup>11</sup>

**Table 14:** Saluan-Banggai forms with addition of final glottal stop

	'branch' * <i>pana</i>	'mouth' * <i>ɲaŋa</i>	'ginger' * <i>laqia</i>	'rice husk' * <i>qeta</i>	'gall, bile' * <i>qapeju</i>
Bgg	<i>panga</i>	<i>baba</i>	—	—	<i>soput</i>
Bal	<i>panga?</i>	<i>nganga?</i>	<i>loiya?</i>	<i>ota?</i>	<i>(s)opoyu?</i>
And	<i>panga?</i>	<i>nganga?</i>	<i>loiya?</i>	<i>ota?</i>	<i>poyu?</i>
Sal	<i>sampang</i>	<i>nganga?</i>	<i>loiya?</i>	<i>ota?</i>	<i>pou?</i>
Bbk	<i>pang?</i>	<i>nganga?</i>	<i>moinit</i>	<i>soka?</i>	<i>opou?</i>
	'thorn' * <i>DuRi</i>	'clothes louse' * <i>tumah</i>	'husband' * <i>la(ŋ)kai</i>	'termite' * <i>anay</i>	'knife' * <i>pisaw</i>
Bgg	<i>sulay, tadi</i>	—	<i>langkai</i>	<i>eakan</i>	<i>piso</i>
Bal	<i>ruri?</i>	<i>tuma?</i>	<i>langkai?</i>	<i>araka</i>	<i>piso?</i>
And	<i>rii?</i>	<i>tuma?</i>	<i>langkai?</i>	<i>ane?</i>	<i>piso?</i>
Sal	<i>hii?</i>	<i>tuma?</i>	<i>langkai?</i>	<i>ane?</i>	<i>piso?</i>
Bbk	<i>dugi?</i> (<Gtl)	<i>tuma?</i>	<i>langkai?</i>	<i>ane?</i>	<i>piso?</i>

Although it is tempting to think that unexpected final glottal stop might mark a word as having been borrowed — compare *piso?* 'knife', possibly borrowed from Malay *pisaw* — this cannot be true of every case. The Balantak, Andio and Saluan forms for 'thorn', respectively *ruri?*, *rii?* and *hii?*, exhibit all the regular reflexes of PMP \**D* and \**R*, and therefore could hardly be the result of borrowing (only Bobongko *dugi?*, with irregular *d* < \**D* and *g* < \**R*, can clearly be considered a loan). Second, addition of final glottal stop is not characteristic of borrowing in general, at least certainly not in Balantak, the one language for which we have the most complete information concerning word stock.

There may in fact be no unitary explanation for the occurrence of final glottal stop in these forms. PMP \**pana* 'fork of a branch, bifurcation' and \**ɲaŋa* 'mouth' both contain a root which Blust (1988) reconstructs as \**ɲa(q)* 'gaping, wide open'. On more marginal grounds, final glottal stop in reflexes of \**laqia* 'ginger' could possibly reflect metathesis of PMP \**q* to final position.

At any rate, the addition of final glottal stop has all the earmarks of being a local innovation. There appears to be no correlation with any of the laryngeals reconstructed by Zorc (1982, 1996), nor is there any correlation with Kaili-Pamona languages that have retained final glottal stop. Addition of final glottal stop as a local development has also been noted in the Sangir and Sangil languages of North Sulawesi (Sneddon 1984:51–52).

in Banggai *bakoko*). Final *k* is sometimes articulated as glottal stop in the eastern dialect of Banggai as well, e.g. *toik, toi?* 'sarong' (van den Bergh 1953:10–11).

<sup>11</sup> Tables 13 and 14 are not exhaustive, and the reader will note other examples of added final glottal stops in the other tables. Even if we are to attribute added glottal stop to Proto Saluan-Banggai, this putative phoneme must have had a different character from the reflex of PMP \**-q*, since only the latter was able to effect the lowering of \**i* described in §3.8, and the later lowering of \**u* in Balantak and Banggai (§4.1).

## 4 Other sound changes

In this section, I describe further sound changes which are exhibited by Saluan-Banggai languages. Some of these changes may be regarded as shared innovations; other changes occurred in individual languages. The significance of these changes for an internal classification of the Saluan-Banggai microgroup is taken up in §5.

### 4.1 Lowering of \*u

In a parallel change to the lowering of \*i (see §3.8), \*u was lowered preceding reflexes of PMP \*q (presumably glottal stop) in Banggai and Balantak.

**Table 15:** Lowering of \*u in Banggai and Balantak

	'fall' *Nabuq	'ten' *sa-puluq	'full' *ma-penuq	'penis' *lasuq
Bgg	<i>tuong</i>	<i>songulo</i>	<i>moono</i>	<i>laso</i>
Bal	<i>nawo?</i>	<i>sompulo?</i>	<i>buke?</i>	<i>lao?</i>
And	<i>nabu?</i>	<i>sompulu?</i>	<i>buke?</i>	<i>lasu?</i>
Sal	<i>nabu?</i>	<i>sompulu?</i>	<i>buke?</i>	<i>lasu?</i>
Bbk	<i>nabu?</i>	<i>sampulu</i>	<i>moponu?</i>	<i>tau</i>

### 4.2 Reflexes of PMP \*j and \*y

Since PMP \*j and \*y merged as \*y in a language ancestral to the Saluan-Banggai languages, we may consider their reflexes together. Since neither protophoneme has been reconstructed in word-initial position, this leaves only medial and final instances to be considered. Recall furthermore from §3.4 that all instances of PMP \*-ay and \*-ey had been lost via prior monophthongisation to \*-e.

**Table 16:** Reflexes of PMP \*j and \*y

	'sun' *qalejaw	'sniff' *hajek	'field rice' *pajey	'name' *ŋajan	'ant' *sejem
Bgg	<i>oloyo</i>	<i>oyok/i</i> 'kiss'	<i>labue</i>	<i>sambu</i>	—
Bal	<i>ilio</i>	<i>ook</i>	<i>pae</i>	<i>ngaan</i>	<i>soom</i>
And	<i>sina</i>	<i>ook</i>	<i>pae</i>	<i>ngaan</i>	—
Sal	<i>sina</i>	<i>ook</i>	<i>pae</i>	<i>sanggo</i>	<i>soom</i>
Bbk	<i>dolag</i>	<i>ook</i>	<i>pae</i>	<i>sanggor</i>	<i>loog</i>
	'inside' *qunej	'snake, worm' *ulej	'navel' *pusej	'fly' *lalej	'palm, sole' *palaj
Bgg	<i>lalong</i>	<i>uloy</i>	<i>pusoy</i>	<i>poos</i>	<i>palalap</i>
Bal	<i>lalom</i>	<i>ule</i>	<i>puse</i>	<i>laale</i>	<i>palaa</i>
And	<i>rarom</i>	<i>ulo</i>	<i>puse</i>	<i>laalo?</i>	<i>pala</i>
Sal	<i>uno, unoo</i>	<i>ulo, uloo</i>	<i>pusoo</i>	<i>lalo, laloo</i>	<i>palaa</i>
Bbk	<i>uno</i>	<i>bintana?</i>	<i>puso</i>	<i>lalo</i>	<i>pala</i>

	'fire' *hapuy	'pig' *babuy	'swim' *ɲaɲuy	'withered' *layu	'shy, ashamed' *ma-heyag
Bgg	<i>bilat</i>	<i>babui</i>	<i>kayok</i>	<i>mo/loyu</i>	<i>ma/maa</i>
Bal	<i>apu</i>	<i>bau?</i>	<i>langu</i>	<i>ma/lau</i>	<i>maka/maa?</i>
And	<i>apu</i>	<i>bau</i>	<i>langu</i>	—	—
Sal	<i>apu, apuu</i>	<i>bau, bauu</i>	<i>langu, languu</i>	—	—
Bbk	<i>apu</i>	<i>bau</i>	<i>langoy</i> (<Gtl)	—	—

As emerges from Table 16, the usual reflexes of \*y (< PMP \*y, \*j) are as follows. In Banggai \*y is reflected as y (and as i in Banggai *babui* 'pig'; Banggai *mamaa* 'shy' is an exception). In Balantak, \*-oy (< PMP \*-ej) is reflected as e, otherwise this phoneme was lost without vowel changes (Balantak *ilio* 'sun' is an exception). In Saluan, Bobongko and Andio, PMP \*-j- was lost without vowel changes; we might assume the same fate befell reflexes of PMP \*-y-, but unfortunately present data are too scant to confirm this.<sup>12</sup> Finally in Saluan, Bobongko and Andio, word-final \*y (from either source) was lost, except that some Saluan dialects reflect \*-y as length on the final vowel.

### 4.3 Reflexes of PMP \*R

PMP \*R is reflected as r in Balantak and l in Banggai (via \*r), but was usually lost in Saluan, Andio and Bobongko. Only Saluan has a non-zero reflex and then only in word-final position, where (in at least some dialects) PMP \*R is reflected as vowel length.

Table 17: Reflexes of PMP \*R

	'rib' *Rusuk	'vein, tendon' *uRat	'heavy' *beReqat	'male' *maRuqanay
Bgg	<i>lusuk</i>	<i>neet</i>	<i>ba/balat</i>	<i>malane</i>
Bal	<i>rusuk</i>	<i>urat</i>	<i>ma/rawat</i> (<met.)	<i>moro/one</i>
And	<i>usuk</i>	<i>uat</i>	<i>ma/buat</i>	<i>ma/ane</i>
Sal	<i>usuk</i>	<i>uat</i>	<i>ma/boat</i>	<i>mo/ane</i>
Bbk	<i>usuk</i>	<i>ugat</i> (<Gtl)	<i>ma/boat</i>	<i>mo/ane</i>
	'water' *waiR	'hear' *DeɲeR	'dry' *tuquR	'coconut' *ɲiuR
Bgg	<i>paisu</i>	<i>longol</i>	<i>mo/tuul</i>	<i>potil</i>
Bal	<i>weer</i>	<i>rongor</i>	<i>mo/tu<sup>o</sup>or</i>	<i>nuur</i>
And	<i>ue</i>	<i>rongo</i>	<i>mo/tu<sup>o</sup>u</i>	<i>niu</i>
Sal	<i>ue, uee</i>	<i>hongo, hongoo</i>	<i>mo/ti<sup>o</sup>i</i>	<i>niu, niuu</i>
Bbk	<i>ue</i>	<i>rongo</i>	<i>mogangu?</i>	<i>bango?</i>

<sup>12</sup> Perhaps to be added to the list in Table 16 would be Bobongko, Saluan *kau?*, Andio, Balantak *kau*, and Banggai *kau*, *kayung* 'wood', on the assumption that PMP \*kahiw was resegmented to \*kayu after loss of \*h. This interpretation is supported by data from Bungku-Tolaki languages, viz. Bungku, etc. *keu* and Tolaki *kasu* (with fortition of \*y). However, the possibility cannot be ruled out that PMP \*kahiw became PSal \*kau, with Banggai *kayung* a subsequent borrowing from Malay (compare van den Berg 1991:6).

Other examples of the fate of word medial PMP \*-y- in Balantak are *aam* 'animal' (< PMP \*qayam 'domesticated animal'), *lua?* 'vomit' (< PMP \*luya) and — with retention of y — *layang* 'fly' (< PMP

Considering the data on the fate of \*y presented in §4.2, this strongly suggests that \*R went through a \*y-stage in Saluan, certainly in final position. The most elegant way of capturing this would be to say that \*R became \*y everywhere, followed by \*y > \*0-0-V: (where V: indicates a lengthened vowel). However, there is less evidence to suggest that \*R went through a \*y-stage before being lost word-medially, and there is no evidence for it in word-initial position, since neither PMP \*y nor \*j have been reconstructed word-initially. I therefore propose the following (but less elegant) set of changes, which occurred in the language ancestral to Saluan, Bobongko and Andio:

\*R > 0-0-y

\*y > -0-V:

Lengthened vowels were then lost as a drift-like tendency in Bobongko, Andio, and certain of the Saluan dialects.<sup>13</sup>

Although Bobongko reflects PMP \*R as zero in inherited forms, in many cases Bobongko has *g* via borrowing from Gorontalo (or some other Gorontalo-Mongondow language). As illustrated in the following examples, often semantic shifts or other unexpected segmental reflexes give evidence that such forms are loans (Gorontalo and Proto Gorontalo-Mongondow (PGM) forms are from Usup 1986).

Bobongko *dugu?* 'blood', Gorontalo *duhu*, PGM \**dugu?*, from PMP \**ZuRuq* 'sap, juice, gravy'. Both the change \*Z > *d* and the semantic shift to 'blood' mark this form as borrowed (see further Blust 1991). Compare also Bobongko *juu?* 'honey' via direct inheritance.

Bobongko *kugito?* 'octopus', PMP \**kuRita*. Raising of final \*a > *o* is regular in Gorontalo and Buol (Sneddon & Usup 1986).

Bobongko *patig* 'sandbank', Gorontalo *patihu*, PGM \**pasig*, PMP \**pasiR*. PGM \*s > *t* is regular in Gorontalo, Buol and Suwawa (Sneddon & Usup 1986)

Bobongko *toga?* 'dammar', Gorontalo *tohe*, PGM \**soga?* 'lamp', PMP \**seRaq* 'fire, roast'. PGM \*s > *t* is regular in Gorontalo, Buol and Suwawa (Sneddon & Usup 1986)

Bobongko *dagat* 'sea', Gorontalo *deheto*, PGM \**dagat* 'sea', PMP \**daRat* 'surface (of sea or land)'. Initial \*d > *d* is regular in Gorontalo-Mongondow.

Bobongko *dugi?* 'thorn', Gorontalo *duhi*, PGM \**dugi*, PMP \**DuRi*. Initial \*D > *d* is regular in Gorontalo-Mongondow.

Bobongko *monugang* 'parent/child-in-law', Gorontalo *moluhango*, from a derived form of PMP \**tuRan*. Other Saluan languages have reflexes of Proto Celebic \**panianan* 'parent-in-law', \**manian* 'child-in-law'.

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\**layan*). Unfortunately data which might give us a clearer picture of the fate of PMP \*-y- in the other Saluan-Banggai languages are not available to me.

<sup>13</sup> The dialect situation in Saluan has never been properly clarified, and thus it is not possible to give an account of which Saluan dialects have long vowel reflexes, and which do not. Zobel (pers. comm.) notes that long vowel reflexes must be fairly widespread, since they are found in both Nambo on the southern coast and in Bunta on the northern coast. Long vowel reflexes are not indicated on my word list from Simpang village (Robert Brown 2001:pers. comm.), and are sometimes indicated, sometimes not, on Busenitz's four Saluan word lists (sometimes even on the same word list an item has two responses indicated, one with and one without long vowel).

Bobongko *tuag* ‘answer’, Gorontalo *tuahu*, PGM *\*tubag*, PPh *\*tubaR*. Buol and Gorontalo exhibit loss of PGM *\*-b-* in this form.

Although today Bobongko speakers are in contact with Gorontalo speakers who reside in or periodically visit the Togian Islands, sound changes which have occurred in Gorontalo make it clear that these cannot be recent borrowings. The implications for prehistorical relationships are not explored here, but clearly Bobongko represents another case of a ‘non-g’ language that has borrowed extensively from a language where *\*R > g*; see especially Blust (1991:89ff.).<sup>14</sup>

#### 4.4 Weakening of *\*b*

As exemplified by the following cognate sets, PMP *\*b* became a bilabial approximant (represented orthographically as *w*) both initially and medially in Balantak. Intervocalic *w* has sometimes further weakened to zero, particularly when one of the contiguous vowels is *u*.

Table 18: Lenition of *\*b* in Balantak

	‘bone’ <i>*buku</i>	‘buah’ <i>*fruit</i>	‘stone’ <i>*batu</i>	‘fall’ <i>*nabuq</i>	‘ashes’ <i>*qabu</i>
Bgg	<i>buku</i>	<i>sao</i>	<i>batu</i>	<i>tuong</i>	<i>abuk</i>
Bal	<i>wuku</i>	<i>woo?</i>	<i>watu</i>	<i>nawo?</i>	<i>awu, au</i> ‘dust’
And	<i>buku</i>	<i>bunga</i>	<i>batu</i>	<i>nabu?</i>	<i>abu</i>
Sal	<i>buku</i>	<i>bua?</i>	<i>batu</i>	<i>nabu?</i>	<i>abu?</i>
Bbk	<i>buku</i>	<i>bua?</i>	<i>batu</i>	<i>nabu?</i>	<i>agu?</i>

There are, however, important exceptions where *\*b* is retained as *b* in Balantak, among them *bolian* ‘shaman’ (compare PWMP *\*balian*), *bitu?on* ‘star’ (PMP *\*bituqen*), *bose* ‘paddle’ (PMP *\*beRsay*), *bunga* ‘flower’ (PMP *\*buNa*), *bau?* ‘pig’ (PMP *\*babuy*), *toobuan* ‘wasp’ (PMP *\*tabu-an*), *banang* ‘string’ (PMP *\*benang*), and *bisul* ‘boil’ (PMP *\*bisul*). Borrowing, even from another Saluan language, could account for these forms. The parallel Banggai form *banaang* ‘string’ (with geminate vowel in the final syllable) makes a strong case for borrowing from Malay *benang*. The fact that dialectally Saluan has both *bisun*, *bisul* ‘boil’ argues that the Saluan form (and hence the Balantak form) was likewise borrowed from an outside language.

<sup>14</sup> In all I have accumulated only seven examples of PMP *\*R > 0* in Bobongko, versus twenty examples of PMP *\*R* reflected as *g* via borrowing. Other instances of borrowing not given in the main text are:

- Bobongko *bagu* ‘new’, Gorontalo *bohu*, PGM *\*bagu*, PMP *\*baqeRu*
- Bobongko *bagu* ‘hibiscus’, PGM *\*bagu*, PMP *\*baRu*
- Bobongko *dagum* ‘needle’, PGM *\*dagum*, PMP *\*ZaRum*
- Bobongko *dugian* ‘durian’, PMP *\*DuRi-an*
- Bobongko *kolofigi* ‘left’, Gorontalo *?oloihi*, PGM *\*koloigi*, PMP *\*wiRi*
- Bobongko *bagang* ‘molar’, PGM *\*bagang*, PMP *\*baReqan*
- Bobongko *bogaani* ‘brave’, Gorontalo *buheli*, PGM *\*bogani*, PMP *\*beRani*
- Bobongko *origi?* ‘house post’, Gorontalo *wolihi*, PMP *\*ha-DiRi*
- Bobongko *lindug* ‘earthquake’, Gorontalo *liluhu*, PGM *\*linug*, PMP *\*linuR*
- Bobongko *layag* ‘sail’, Gorontalo *layahu*, PGM *\*layag*, PMP *\*layaR*
- Bobongko *tumolog* ‘drip, dribble’, Gorontalo *tolohu*, PGM *\*solog*, PMP *\*seleR* (or *\*seleg*)

Another set of data gives evidence that intervocalic \*b weakened (and was often lost) in Saluan and Bobongko. This change is most strongly associated with another \*b elsewhere in the word, though lenition is also to be noted in reflexes of \*tubuq ‘live’ and \*tebuh ‘sugarcane’. Orthographic *f* in Bobongko represents a voiceless bilabial fricative [ɸ], which also has allophones [β] and [h] (Mead in press).

**Table 19:** Lenition of \*b in Saluan and Bobongko

	‘lips’ *bibiR	‘all’ PSal *ibi?	‘above’ *babaw	‘carry’ *baba	‘pig’ *babuy
Bgg	<i>bibil</i>	<i>saisa/ibi/no</i>	<i>babo</i>	<i>baba</i>	<i>babui</i>
Bal	<i>wewer</i>	<i>wiwi?/na</i>	<i>wawo</i>	<i>wawa</i>	<i>bau? (**wau)</i>
And	<i>bibi</i>	<i>biibi?/no</i>	<i>babo</i>	<i>baba</i>	<i>bau (**babu)</i>
Sal	<i>biwi, biwii</i>	<i>iwi?iwi?</i>	<i>bawo</i>	<i>boa</i>	<i>bau, bauu</i>
Bbk	<i>bifi</i>	<i>ififi?</i>	<i>bafo</i>	<i>boa</i>	<i>bau</i>
	‘fish trap’ *bubu	‘female’ *ba-b[in]ahi	‘live’ *tubuq	‘sugarcane’ *tebuh	
Bgg	—	<i>boine</i>	<i>tubo</i>	—	
Bal	<i>wuwu?</i>	<i>wiwine</i>	<i>tuu?</i>	<i>tombong</i>	
And	—	<i>bobine</i>	<i>tubu?</i>	<i>umpol</i>	
Sal	<i>buu?</i>	<i>boune</i>	<i>tuu?</i>	<i>tumbo?</i>	
Bbk	<i>buu?</i>	<i>boune</i>	<i>tuu?</i>	<i>tou?</i>	

#### 4.5 Depalatalisation of \*Z

PMP \*Z became *s* in Balantak and *d* in Banggai and Andio. It remained a palatal in Saluan and Bobongko (orthographic *j* represents a palatal affricate). There is one known case of PMP \*z patterning with \*Z.

**Table 20:** Depalatalisation of PMP \*Z

	‘chin’ *qaZay	‘rain’ *quZan	‘road’ *Zalan	‘far’ *Zauq-en	‘grain’ *zelay
Bgg	<i>ade</i>	<i>udan</i>	<i>loloan</i>	<i>o/doon</i>	—
Bal	<i>asi</i>	<i>usan</i>	<i>salan</i>	<i>o/loa</i>	<i>sole?</i>
And	<i>ade</i>	<i>udan</i>	<i>dalan</i>	<i>ma/do?on</i>	<i>dole?</i>
Sal	<i>aje</i>	<i>ujan</i>	<i>jalan</i>	<i>ma/jo?on</i>	<i>binde</i>
Bbk	<i>aje</i>	<i>ujan</i>	<i>jalan</i>	<i>o/jo?on</i>	<i>binte?</i>

#### 4.6 Depalatalisation of \*ñ

In the same languages in which \*Z was depalatalised, PMP \*ñ also became *n*. In Saluan and Bobongko, \*ñ was depalatalised only preceding \*i.



Table 21: Depalatalisation of PMP \*ñ

	'weave' *añam	'breathe' *ñawa	'3SG POSS' *(n)i-a	'coconut' *ñiuR	'bee' *wañi
Bgg	—	noa	-no	<u>potil</u>	—
Bal	anam	mi/noa	-na	nuur	wani?
And	anam	—	-no	niu	—
Sal	añam	miki/ñoa	-ño	niu	uani?
Bbk	añam	<u>mingusa</u>	-ño	<u>bango?</u>	uani?

#### 4.7 Regressive assimilation of \*u > i

In four known cases, \*u in the penultimate syllable regressively assimilated to \*i in the ultimate syllable. Although other vowel changes and assimilations occur in the data, this particular change is notable in that it is reflected in Andio, Saluan and Bobongko, but not in Balantak or Banggai.

Table 22: Regressive assimilation of \*u > i in Andio, Saluan and Bobongko

	'skin' *kulit	'hide' *buni	'vagina' *puki	'thorn' *DuRi
Bgg	kulit	—	uki	<u>sulay, tadi</u>
Bal	<u>kuang</u>	wuni	<u>pepek</u>	ruri?
And	kilit	bini	piki	rii?
Sal	kilit	—	piki	hii?
Bbk	kilit	bini	piki	<u>dugi?</u> (<Gtl)

#### 4.8 Changes in individual languages

Morpheme-initial \*p was sporadically lost in Banggai. Although loss of \*p has been noted most frequently preceding u, no conditioning environment can be clearly stated. The following cognate sets have appeared in other tables, but it is worth bringing them together here.

Table 23: Loss of initial \*p in Banggai

	'ten' *sa-puluq	'trunk' *puqun	'white' *ma-putiq	'vagina' *puki
Bgg	sangulo	uu	moute	uki
Bal	sompulo?	pu?un	<u>mobulak</u>	<u>pepek</u>
And	sompulu?	pu?u	<u>mobulak</u>	piki
Sal	sampulu?	pu?un	mopute?	piki
Bbk	sampulu	pu?un	mopute?	piki

	'full' <i>*ma-penuq</i>	'bat' <i>*paniki</i>	'choose' <i>*piliq</i>
Bgg	<i>moonoo</i>	<i>uniki</i>	<i>ile/i</i>
Bal	<i>buke?</i>	<i>poniki?</i>	<i>ruruki</i>
And	<i>buke?</i>	—	<i>pile?/i</i>
Sal	<i>buke?</i>	—	<i>pile?/i</i>
Bbk	<i>moponu?</i>	<i>raupa</i>	<i>pile?/i</i>

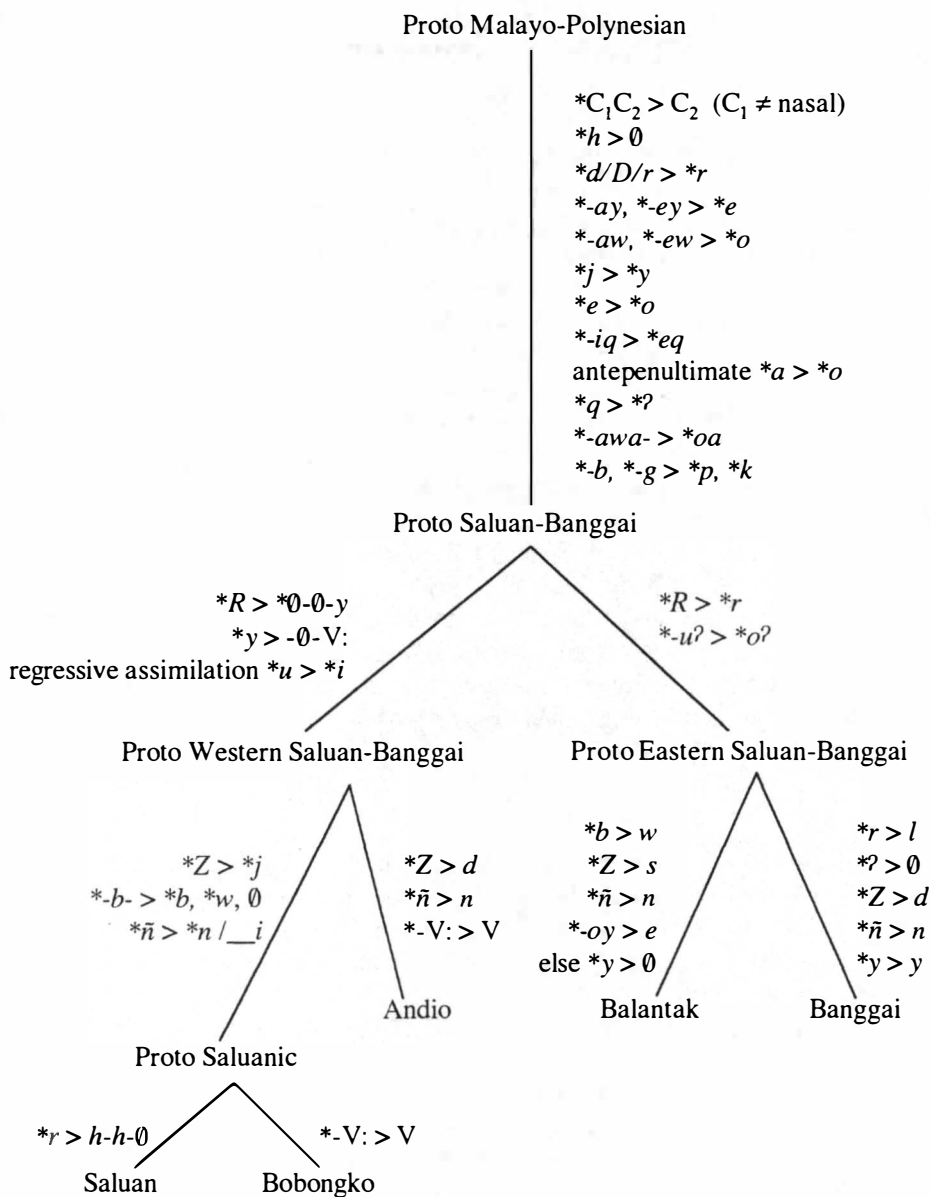
It is presently unclear whether the loss of *\*p* was an irregular but independent development in Banggai, or whether it reflects areal influence from Moluccan languages where lenition and often loss of *\*p* is regular (Adriani & Kruyt 1914:290, 291; Collins 1983:114ff.). Irregular loss of *\*p* has also been noted in Buginese (Mills 1975:247; Adelaar 1994:12).

Three other changes in individual languages which have been treated incidentally above include *\*r > h-h-θ* in Saluan (see §3.3), *\*r > l* in Banggai (see §3.3 and §4.3), and the loss of glottal stop in Banggai (see §3.12).

## 5 Conclusion: shared changes and internal classification

Based on the historical sound changes outlined above, I propose a subgrouping for the Saluan-Banggai languages as shown in Figure 2. This diagram incorporates the changes which together distinguish these languages from Proto Malayo-Polynesian (see §3), and the changes which differentiate these languages from one another (see §4).

From Figure 2 it should be noted that some sound changes must have occurred independently in different branches of Saluan-Banggai. For example, both Andio and Banggai share in the change *\*Z > d*, but I do not regard this change as having occurred during (or as being indicative of) a period of common development. Rather, it occurred independently in both languages, after the break-up of their common ancestor. Were we to assume that *\*Z > d* was a shared innovation, then Andio and Banggai would constitute a first-order subgroup that excludes Balantak (where *\*Z > s*). In that case, however, the changes *\*R > \*r* and *\*-u? > \*-o?* in Balantak and Banggai would have to be regarded as parallel (rather than shared) innovations, which in my opinion is a less desirable assumption. By their nature, subgrouping arguments are to some degree circular — our view of shared sound changes both determines and is determined by our subgrouping assumptions — and arguments often hinge on which changes we are willing to posit happened only once, and which happened twice or more.



**Figure 2:** Sound changes in the Saluan-Banggai microgroup

Similarly, although I list twelve changes which distinguish the Saluan-Banggai languages from their common ancestor, Proto Malayo-Polynesian, there is no *a priori* reason to assume that they are all reflective of a period of common development. Loss of PMP \*h, rhotacisation of PMP \*d, PMP \*q becoming glottal stop and even the backing of PMP \*e (schwa) to \*o are found frequently enough elsewhere in Austronesia that such changes could have occurred across the Saluan-Banggai area after the break-up of their common ancestor.

On the other hand, the changes PMP \*j > \*y, PMP \*-iq > \*eq, and PMP \*-awa- > \*oa are sufficiently unusual that it seems best to consider them to be innovations which occurred during a period of common development. The first two of these changes, in fact, are shared by other Sulawesi languages, and are useful for postulating higher-order groupings between the level of Proto Malayo-Polynesian and Proto Saluan-Banggai. The significance of these twelve changes for macrogrouping, then, cannot be fully appreciated without also comparing the Saluan-Banggai languages with neighbouring languages on the island of Sulawesi. While the present paper has laid the groundwork for such a study, I do not make that comparison here. Rather I have made it the topic of a separate paper which also appears in this volume.

This study, then, is only a first look at historical sound change among languages of eastern Sulawesi, and falls short of a complete comparative study in at least three other ways. First, some vowel changes, primarily assimilations, which are localised to particular languages have not been treated. Second, I have not touched on lexical, semantic or grammatical innovations which could bolster the evidence from sound change. Finally, although I consider Proto Saluan-Banggai to be a valid protolanguage, I have not included here any Proto Saluan-Banggai reconstructions.

Nonetheless, the principal results of this study still stand. I have laid out the major sound changes which distinguish the Saluan, Bobongko, Andio, Balantak and Banggai languages from Proto Malayo-Polynesian, and I have also shown that there is no basis in historical sound change for excluding Banggai from a Saluan-Banggai group. Indeed, in the internal classification of these languages, Banggai and Balantak group closely together, and stand apart from an eastern group comprising Saluan, Bobongko and Andio.

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