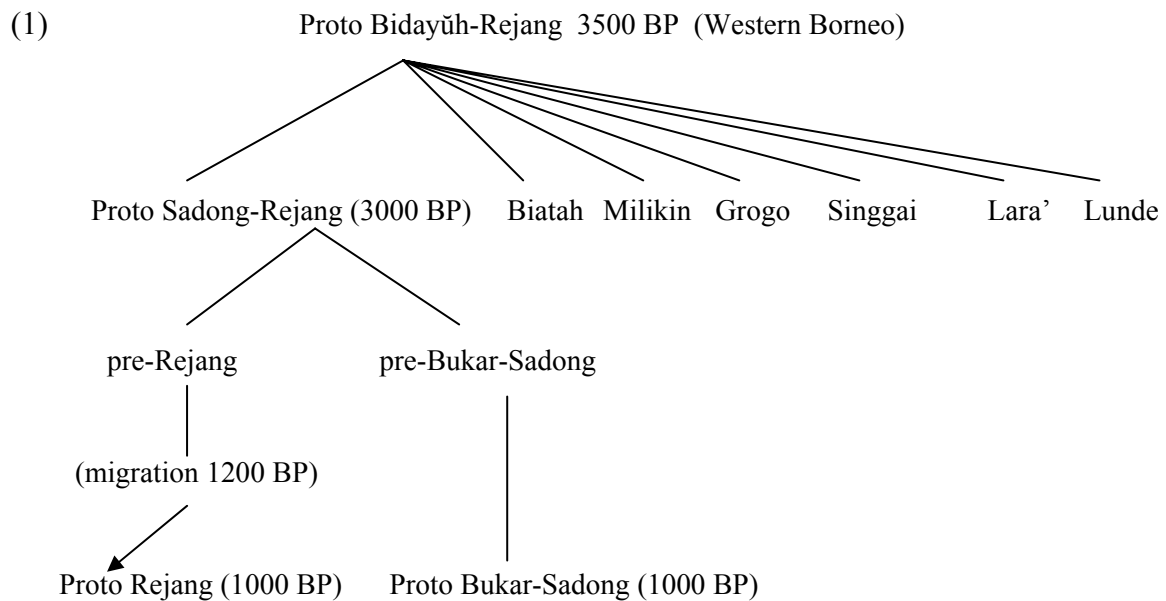


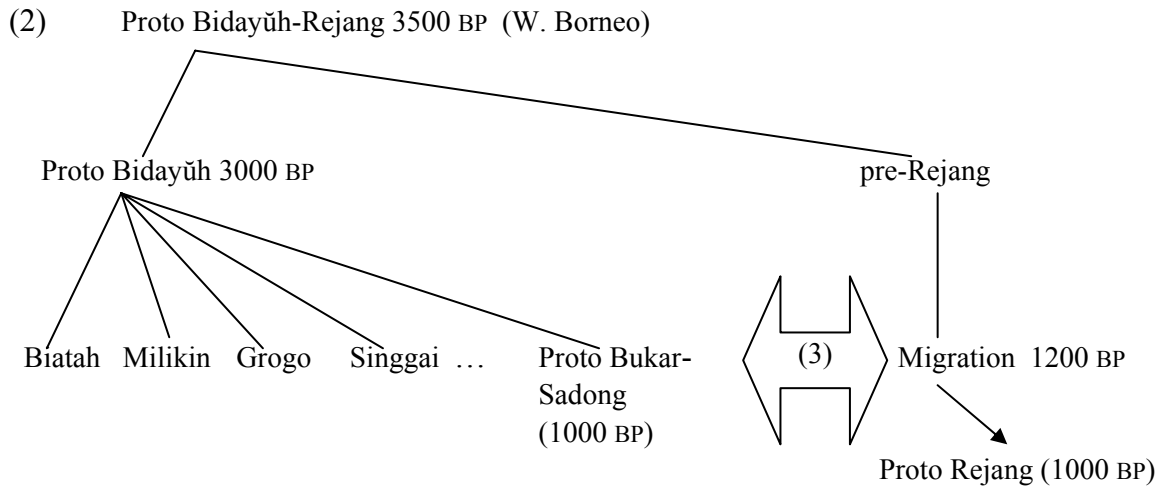
24 *Out-of-Borneo subgrouping hypothesis for Rejang: re-weighing the evidence*

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This paper revisits a subgrouping hypothesis for the Rejang language of Sumatra presented in McGinn (2003), and offers a new hypothesis based on new evidence and on criticisms received from Austronesianists. The hypothesis to be defended is shown in (1).



The subgrouping hypothesis shown in (1) above replaces the proposal by this writer (2003) illustrated in (2).



In earlier publications (McGinn 1999, 2000, 2003), we attempted to construct an ‘out-of-Borneo’ subgrouping hypothesis for Rejang, and in particular, McGinn (2000) suggested the possibility that Generalised PMP *a Raising, illustrated in (3a-c) below, might constitute a set of innovations shared by Rejang and one or more Land Dayak languages. The following changes were among the first to distinguish pre-Rejang from PMP.

- (3) a. $*-{}^{\prime}VCaC\# > {}^{\prime}VCaC[-\text{velar}]\#$ PMP unstressed *a > /ə/ except before velars.
 b. $*-{}^{\prime}VCa\# > {}^{\prime}VCa\#$ PMP unstressed *a > /ə/ in word-final position.
 c. $*-{}^{\prime}VCaC\# > VC{}^{\prime}VC\#$ PMP stress pattern (symbolised by preceding ${}^{\prime}$) shifted to the word-final syllable.

These three changes were originally posited by McGinn (1997) solely for the sake of supporting the regularity hypothesis against the challenges posed by Blust’s pioneering article (1984), and only later were those same changes used as the basis for subgrouping arguments (McGinn 2000, 2003). The Stress Shift change (3b) was motivated by several factors, the most compelling being that it served to increase the regularity of the other sound changes, thereby explaining many apparent irregularities. The most important change for subgrouping purposes, however, is (3a) because the conditioning factor (‘except before velars’) is unusual and phonetically unmotivated. (See §4). Moreover, a comparable change had been recorded for the Tapū and Mawang (labeled Měntu) dialects of Bukar-Sadong Bidayüh by Court (1967a) and Topping (1990), and confirmed by this writer during field work on six dialects¹ of Bukar-Sadong conducted in 2000 and 2001.

Exploring the possibility that (3a) represented a shared innovation linking Rejang and Bukar-Sadong, McGinn (2003) provided further evidence to recommend a subgrouping hypothesis, including counterparts of (3a,b,c) (see §(7) below). But there was also contradictory evidence in the form of an apparently regular sound change, namely *l > r, which affected all Bukar-Sadong dialects and several other Bidayüh languages, but not Rejang. Adjusting the hypothesis to accommodate the contrary evidence, McGinn (2003) concluded that *l > r must have preceded *a Raising in Bukar-Sadong, and if so, *a Raising was not a shared innovation after all; therefore, *a Raising must have been the result of rule borrowing after a long period of language contact (presumably in Borneo).

¹ The six dialects surveyed were Tibakang, Ranchan, Mujat, Tapū, Mawang and Badūp. Not included was Kampung Bunun, a Bukar-Sadong language with a six-vowel system as described by Asmah Haji Omar (1983:445), who claims that ‘the phoneme /a/ is phonetically [∅].’

Problems with the borrowing theory were soon pointed out by Robert Blust (personal communication)² and David Zorc (2006:509); and Adelaar (2007) questioned my assumption that sometimes Bidayūh /l/ directly reflects PMP *l. However, the criticisms were not wholly satisfactory, since taken together, they posed a paradox for the Comparative Method: the basic comparison (3a) seemed to resist explanation by either chance, borrowing or common inheritance. In particular:

- (4) a. Chance is ruled out by the unusual conditioning of (3a).
- b. Borrowing of (3a) is ruled out because unsupported by independent lexical evidence.
- c. Direct inheritance of (3a) is ruled out owing to the contradictory evidence of *l > /r/ in many Bidayūh languages but not Rejang.³

If (4a-c) offers a paradox, then one or more of the statements must be hiding a false assumption. It is theoretically impossible for all three to be valid.

1 The status of PMP *l > /r/ in Oceanic

A possible way out of the dilemma posed by (4a-c) follows from a comment by John Lynch which implies that (4c) may be erroneous.⁴ The following was his reaction to the treatment of *l > r in McGinn (2003).

- (5) At least in Oceanic, the *l > r change is very common, and in many cases not diagnostic of subgrouping. In other words, it seems to be a natural change which could easily occur independently. Looking at Tryon's New Hebrides (Vanuatu) survey, for example, there are a couple of cases in Malakula where groups of languages show *l > r but where, on other criteria, these languages subgroup with other languages which show *l > l. In Tanna, *l and *r (and *R when reflected) have merged, in some languages as l, in others as r. Similar kinds of things have occurred, as far as I am aware, in other areas of Oceanic.

While I would not dismiss *l > r as an innovation, I think it is a weak one — rather like palatalisation of *t before *i: something that doesn't surprise you when you see it, as it happens so often; and therefore something not to be given much weight if there are other, less expected, innovations which would support a different subgrouping theory.

(John Lynch pers. comm.)

² Blust (pers. comm.) advised the following experiment: 'Line up the basic vocabularies of Rejang and any two or three L(and)D(ayak) languages and pull out all of the exclusively shared lexical innovations. Do you find any? If not, this is reason to suspect that Rejang is not a recent arrival in Sumatra from the LD area.' In fact, so far we have found vanishingly few shared lexical innovations (listed in McGinn 2003), to which can be added Tibakang laca? 'soaked' and Rejang ləca? 'soaked'.

³ This last point bears repeating for clarity's sake: the Bukar-Sadong version of (3a), namely (7ii), while shared with Rejang, is not shared with other Bidayūh languages; and Bukar-Sadong *l > /r/, while shared with many (but not all) Bidayūh languages, is not shared by Rejang.

⁴ The following is the statement that Lynch was addressing: 'The Bukar-Sadong version of PMP *a Raising is not found in other Bidayūh dialects, in contrast to *l > /r/ which is fairly widespread. It follows that *l > /r/ must have preceded *a Raising in Bukar-Sadong; and therefore no version of *a Raising can possibly be assigned to any subgroup containing Proto Rejang and Proto Bukar-Sadong as members. Our most interesting comparison, therefore, must be due to borrowing (language contact) or chance (phonetic drift). But the likelihood of chance must be considered extremely low given the unusual nature of the conditioning (*a underwent raising 'except before velars') in exactly these two languages. Therefore, I shall argue for borrowing as the more likely explanation.' (McGinn 2003:49)

If the above comment is relevant to the concerns of this paper, then what is needed is evidence that *l > r in Proto Bidayūh is indeed a weak innovation. Accordingly, we shall investigate the second conjunct in the following statement to determine if perhaps it might be too strong.

- (6) The characteristic features of the Land Dayak languages which Hudson mentions include distinctive numerals for ‘eight’, ‘nine’ and ‘ten’ and /r/ as the reflex of PAN *l (Kroeger 1998:150–151, citing Hudson 1978; emphasis ours).

According to Paul Kroeger (1998:139), ‘The Land Dayak languages do not appear to be closely related to any other language in Sarawak, but they do form a linguistic subgroup with the many Land Dayak languages spoken across the border in West Kalimantan (Indonesian Borneo)’. This statement provides the context for Hudson’s assertion, quoted above, claiming that PMP *l > /r/ is an important diagnostic feature of Land Dayak (= Bidayūh) languages. Examination of the available evidence within this language group suggests, however, that the pattern of regular *l > /r/ is not as widespread throughout the family as was initially thought; therefore, any attempt to construct a protolanguage for the Bidayūh group must do so on the basis of something other than regular *l > *r. This claim will be substantiated below.

2 The status of PMP *l > /r/ in Bidayūh languages

In fact, the reflexes of PMP *l are problematic among Bidayūh languages. Five sources of evidence support this claim.

First, the data displayed in Ray (1913) indicates that whereas most of the thirteen Land Dayak languages surveyed consistently show expected PMP *l > r, two of the languages—Grogog and Milikin—regularly retain PMP *l as /l/.

Second, in the Biatah-Bidayūh language spoken in Sarawak, whereas most dialects regularly reflect PMP *l as /r/, the Mbaan dialect regularly retains PMP *l as /l/. (Kroeger Ms, 1994:22)

Third, Adelaar (2007), citing unpublished field notes, suggests that in another Bidayūh language of West Kalimantan (Sungkung), /l/ appears to reflect intermediate *r which itself reflects the merger of PMP *R, *r and *l, implying that PMP *l > *r was ancient and /l/ a recent innovation. If this model is proven by future research to account for the organic /l/s in other Bidayūh languages, it would strengthen the case for *l > /r/ as a diagnostic for Bidayūh languages, and weaken if not break the case for a Rejang connection. On the other hand, logically and phonetically it is just as easy to assume that *R, *r and *l merged as intermediate *l in some language, then split into /l/ and /r/ in daughter languages, or changed unconditionally to /r/. Clearly, what are needed are detailed historical phonologies for individual dialects, where the results can be tested against the strict demands of the regularity hypothesis (see McGinn 1997:91–92 for discussion). In the meantime, Lynch’s comments about Oceanic, cited above, remain as a valid cautionary note.

Fourth, among the six Bukar-Sadong dialects surveyed by this writer during field work in 2000 and 2001 and partially displayed in McGinn (2003), the reflexes of PMP *l seem to vary unpredictably between /l/ and /r/ for five of the dialects; and for the sixth dialect (Mujat) there is a three-way alternation between /l/, alveolar /r/ and uvular /ɣ/. In fact, out of a total of thirty-one potential reflexes of PMP *l, Proto Bukar-Sadong shows fifteen cases of *r (see McGinn (2003) examples 38, 39, 46, 103, 107, 108, 136, 158, 163, 168, 186, 187, 200, 242) and fifteen of *l (see the same source for examples 12, 19, 27, 50, 66,

93, 101, 105, 109, 135, 149, 153, 189, 233, 243). Whereas it is likely that some (perhaps all) putative B-S /l/ < PMP *l are Malay borrowings, this remains to be demonstrated in a definitive historical phonology of the Bukar-Sadong language group. For starters, a candidate for borrowing includes one member or the other of the doublet /jʌrʌn/ ‘road’ and /jalʌn/ ‘walk’ in the Tapū, Ranchan, Bedūp and Mawang dialects, which show contrastive /r/ and /l/ corresponding to PMP *l; another may be the PBS outcome *m-ilih ‘choose’ corresponding to PMP *piliq ‘choose’. PBS *milih contains suspicious /l/ and suspicious -/h/ (expected -/ʔ/), exactly like Malay *pilih* ‘choose’. Other possibly problematic examples include PMP *bales = PBS *maləs ‘reply’; PMP *gatel = PBS *gatəl ‘scratch’, PMP *palaqepaq = PBS *kilapa ‘palm frond’, and PMP *balaŋa = PBS *b[a,i]laŋa? ‘clay pot’.

Fifth, Bukar-Sadong dialects overwhelmingly agree with respect to /r/ and /l/ as apparent reflexes of PMP *l. Therefore, even if all the unexpected /l/s are the result of massive borrowing, the borrowing would have occurred very early, in Proto Bukar-Sadong; otherwise the dialect uniformity is unexplained.

These comparative problems justify the decision to re-weigh the subgrouping value of *l > /r/ in relation to the Bidayūh languages in general, and Bukar-Sadong in particular. We now have grounds to set the problem to one side; it is an anomaly to be investigated, not yet a counterexample; it is too weak to bear any weight for subgrouping purposes. By implication, much more importance can and should be given to the set of comparisons (3a,b,c), especially (3a). Just how much weight to assign to (3a) will be taken up in the next section.

3 Back to the basic comparison

As mentioned above, the most important change for subgrouping purposes is (3a) because the conditioning factor (‘except before velars’) is unusual and phonetically unmotivated. (See next section for arguments.) If so, then the discovery that both the Rejang dialect group in Sumatra and the Bukar-Sadong dialect group in Sarawak, show unmistakable traces of a similar change in their phonological histories, constitutes *prima facie* evidence for a shared innovation.

However, change (3a) is directly relevant only for Rejang, because it resulted in partial merger of PMP *a and *e as *ə (schwa). By contrast, the Bukar-Sadong counterpart did not result in merger. Therefore, to be consistent with hypothesis (1), the Bukar-Sadong facts require an additional (and perfectly natural) assumption to be added to the phonological history of Rejang, namely, that (3a) occurred in two steps as shown in (7ii) and (7iv) below.

- | | | | | |
|-----|----|------|------------------------------------|---|
| (7) | i. | (3b) | *-ʼVCa# > ʼVCə# | Unstressed *a > /ə/ in word-final position. |
| | | ii. | (3a-1) *-ʼVCaC# > ʼVCʌC[-velar]# | Unstressed *-aC > *-ʌC except before velars. |
| | | iii. | (3c) Stress Shift (Language split) | Vowels in final syllables became stressed |
| | | iv. | (3a-2) *-VCʼʌC# > VCʼəC[-velar]# | Stressed *ʌC > -əC in Rejang (partial merger) |

Thus, only the first step (7ii) is claimed to be a shared innovation, whereas the partial merger (7iv) occurred in pre-Rejang after language split.

3.1 Summary of PMP last-syllable *a Raising in pre-Rejang

The following formula represents five early changes in the historical phonology of pre-Rejang.

(8) i.	PMP		pre-Rejang		(Unstressed *a > *ə except before velars.)	
	*a	>	*ə / 'VC __ (C[-velar])#			
ii.	PMP		pre-Rejang	PMP	Kebanagung	Gloss
a.	*a	>	*ə / 'VC __ #	*duha	dui	'two'
b.	*a	>	*∅ / 'VC __ C[-velar] #	*taŋan	*taŋan	'hand'
c.	*-aw	>	*əw	*danaw	danəw	'lake'
d.	*-ay	>	*əy	*matay	matəy	'die'
e.	*∅	>	*ə	*taŋan	taŋən	'hand'

3.2 PMP last-syllable *a Raising in pre-Bukar-Sadong

The set of pre-Rejang changes shown by the formula in (8i) *almost* works for reconstructed pre-Bukar-Sadong as well—only the partial merger of *ʌ and *ə is missing (8ii,e). Consider the following set of changes in Bukar-Sadong, illustrated by the Tibakang dialect.

(9)	PMP		pre-Bukar-Sadong	PMP	Tibakang	Gloss
a.	*a	>	*ə / 'VC __ #	*duha	duəh	'two'
b.	*a	>	*∅ / 'VC __ C[-velar] #	*taŋan	təŋan	'hand'
c.	*-aw	>	*əw ... > u	*danaw	danu	'lake'
	*-ay	>	*əy ... > i	*punay	puni	'dove'

To help explain all of these changes, we assume that pre-Bukar-Sadong (like pre-Rejang) had a Malay-type stress system: i.e. the accent fell on the ultimate when the penult was schwa; otherwise on the penult. Another assumption is that all contemporary Bukar-Sadong dialects have ultimate stress, again like Rejang.

3.2.1 Neutralisation of PMP word-final *a in open final syllables

Both languages show evidence of early neutralisation of PMP *-a in open final syllables.

(10)	PMP	Pre-Rejang	Pre-Bukar-Sadong	Tibakang	Gloss
	*duha	*'du↔	*'du↔	du'əh	'two'
	*mata	*'mat↔	*'matə	ba'təh	'eye'
	*naŋa	*'naŋ↔	*'naŋə	na'ŋəh	'fork of river'
	*limə	*'limə	*'limə	li'məh	'five'
	*nia	*'niʔə	*'niʔə	ni'ʔəh	'he/she'

3.2.2 Neutralisation of PMP word-final *-a in diphthongs

Both languages show evidence that *a raised to *↔ in PMP *aw and *ay.

(11)	PMP	Pre-Bukar-Sadong	Proto Bukar-Sadong and Tibakang	Proto Rejang and Rawas	Gloss
	*danaw	*danəw	danu	daniw	‘lake’
	*punay	*punəy	puni	punuy	‘dove’
	*qatey	*atəy	ati	atuy	‘liver’
	*hapuy	*apuy	apuy	apuy	‘fire’
	*kahiw	*kaiw	kayu	kiiw	‘wood’

3.2.3 Raising of PMP *a in closed final syllables ‘except before velars’

Data like that shown below is what first drew my attention to the comparison of Rejang and Bukar-Sadong. The unusual conditioning of PMP *a *except before velars* was first reported for the Měntu-Tapū dialect of Bukar-Sadong by Christopher Court (1967), and for the Musi dialect of Rejang by Robert Blust (1984).

(12)	PMP	Rejang (Rawas)	Bukar-Sadong (Tibakang)	Gloss	McGinn (2003) (Appendix)
	*bulan	bu ^h lən	bu ^h r ʔtn	‘moon’	38
	*quzan	u ^h jən	u ^h j ʔtn	‘rain’	214
	*tawad	ta ^h wəa	taw ^h ʔr	‘haggle’	184
	*anak	a ^h nak	a ^h nak	‘child’	3
	*bataŋ	ba ^h taŋ	ba ^h takŋ	‘trunk (of tree)’	15
	*hasaq	a ^h sah	ŋ-a ^h sa ^h ʔ	‘sharpen’	6

In the same Appendix, see also items: 13, 34, 44, 46, 93, 112, 146, 147, 165, 173, 182, 186, 203, 204, 217, 232 242.

This comparison is the strongest evidence of a greater-than-chance subgrouping relationship between Rejang and Bukar-Sadong. Section 4 provides the justification for this claim.

Finally, there are drift-theoretical comparisons between Rejang and Bukar-Sadong dialects which were listed in McGinn (2003) and repeated in Sets I and II of (13) below. David Zorc (2006:509) reviewed this evidence and judged it as ‘indeed plausible’ with respect to an out-of-Borneo migration theory for Rejang. Much more specifically, the following comparisons are also consistent with hypothesis (1) of this paper.

(13)	Rejang and Bukar-Sadong	Widespread in Borneo	Shared by Mayal
	Set I		
	*Ca- > *C<->- in trisyllables	YES	YES
	*qa- > Ø in trisyllables	YES	NO
	*z > *j (except Rejang d- in ‘road’ and ‘needle’)	YES	YES
	*-eq > -aC; elsewhere *-eC > *-əC	YES	POSSIBLY
	*-q > *-ʔ	YES	NO
	*-mb-, -nd- > -m ^b -, -n ^d -, etc. (‘barred nasals’) ⁵	YES	NO
	*-m, *-n > ^h m, ^h n, etc. (pre-stopped nasals) ⁶	YES	NO

⁵ The distinction between Plain and Barred (post-stopped) nasals precludes the necessity of recognizing phonemic nasalised vowels. See Court (1967) and Scott (1964) for discussion in relation to Bukar-Sadong; see Coady and McGinn (1983) for analysis of a similar issue in Rejang.

Set II = (7)

Stress on final syllable	YES	NO
*-a > *-ə	PROBLEMATIC ⁹	PROBLEMATIC ⁷
*-aC > *-ΛC except before velars	NO	NO

Set III (morphology)

Loss of suffixes in a language with word-final stress	YES	NO
Retention of PMP completive infix *-in- reanalysed as passive morpheme	YES	NO
Loss of *p- and *b- in transitive active verbs, e.g. *piliq > <i>m-ilih</i> ‘choose’; *pinzem > <i>m-injəm</i> ; *bili > <i>m-irih</i> ‘buy’	YES	NO

In the aggregate, the evidence presented in McGinn (2000, 2003) and this paper offers compelling reasons to believe that the Rejangs originated in Borneo (rather than, say, Taiwan, the Philippines, Sulawesi, or the Malay peninsula). Furthermore, the evidence is consistent with the much stronger claim represented by (1), namely, that Rejang belongs in a lower-order subgroup with Bukar-Sadong Bidayūh.⁸

4 Arguments against a drift-theoretical explanation of the basic comparison

The crucial sound change (7ii) can and must be reconstructed independently for pre-Proto Rejang and pre-Proto Bukar-Sadong, and for no other languages (including no other Bidayūh languages), as far as is known at present. Therefore, the research question concerns how this comparison should be explained. The only possibilities are chance (phonetic drift) and shared innovation—implying direct inheritance from a common ancestor language, as illustrated in (1) above. (Borrowing has been excluded owing to the paucity of lexical evidence showing intimate contact between the two languages.) This section presents arguments against the drift-theoretical explanation.

The basic claim is that the conditioning of change (7ii), namely that the change occurred except before velars, is phonetically unexpected and therefore unlikely to have occurred in both Rejang and Bukar-Sadong as the result of mere chance. The crucial issue

⁶ For discussion of Rejang’s pre-stopped nasals, see Coady and McGinn (1983:442) and Voorhoeve (1955).

⁷ Tadmor (2003) argues that *-a > -ə spread by borrowing from Sanskrit via Javanese during the Majapahit period (1293–1520), and subsequently affected scores of Malay dialects and numerous other western Austronesian languages, regardless of whether the affected vowel was stressed or unstressed, under the political sway of the Majapahit empire. Our claim is that Rejang and Bukar-Sadong underwent a similar change independently, and much earlier, which affected only unstressed vowels.

⁸ A note on reflexes of PMP *j is in order owing to astute comments by a reviewer. Rejang dialects reflect PMP *j as -/g/- between vowels and -/t/-k word-finally, with -/k/ being the most frequent; however, -/t/ < *-j is the outcome for the dialect judged by McGinn (2005) to be the most conservative (Rawas). The solution to this problem adopted by McGinn (2003, 2005) was to retain *-j at the level of Proto Rejang, as a direct retention from PMP. The reviewer noted that whereas most Bidayūh languages reflect PMP *j as -/d/- and -/d/, this is not the case for Lara’, Bekati’ and possibly Lundu, which reflect *j as -/g/- between vowels. It is apparent to me that the dialect/language splits in the Rejang and Bidayūh groups point to a shared retention. PMP *j was simply retained as *j at the highest level (Proto Sadong-Rejang). After pre-Rejang split from Proto Sadong-Rejang, the pre-Bidayūh languages developed independent reflexes for PMP *j as noted by the reviewer, and much the same thing happened in the Rejang group. This assumption accounts for the comparisons and preserves the hypothesis.

is whether the comparison (7ii) is *rare enough* to indicate a subgrouping hypothesis, given that the supporting evidence consists of common sound changes. Theoretically, the subgrouping value of (7ii) falls towards zero to the extent that its basis is phonetic and natural, but by the same token, if the basis is phonological and arbitrary, then its subgrouping value rises accordingly.⁹ So why did final velar consonants block raising/neutralisation of PMP *a in pre-Bukar-Sadong and pre-Rejang?

Throughout, we shall assume the generalised version of PMP *a Raising shown in (3) above and analyzed further in (7) above, which involves three shared innovations in Rejang and Bukar-Sadong. Crucially, all of the raised reflexes of PMP *a that underwent Raising were unstressed; and the Raising of *-aC to *-ʌC occurred in all environments except before velars. Our proposal is that Stress Shift occurred after *a Raising had begun to spread, but before the spreading process was complete. In other words, Stress Shift (7iii) interrupted the spread of *a Raising (7i) and (7ii).

Recall that *a Raising only affected unstressed vowels—a phonetically well-motivated assumption. The primary change was probably (7i) affecting unstressed word-final position *-a before word boundary. Next, *a Raising spread to include word-final *-aC except when the final -C was a velar (*-q, *-k, *-ŋ). Left unchecked, the spreading should have generalised totally; so why, indeed, did the spreading stop? We doubt very much that it had anything to do with phonetic naturalness. The relevant question is: why did velar consonants check the spread of PMP *a neutralisation? Is it because velars offer more resistance to airflow from the lungs than, say, labials and alveolars? Does *a neutralisation require more air than the anticipation of a velar can provide? Such a line of questioning seems unlikely to lead to a satisfactory explanation.

A more likely explanation is that the spread of *a Raising was blocked by a competing sound change, namely, (7iii)—Stress Shift. This rule altered the stress pattern from trochaic to iambic, and in the process, would have affected negatively *any* rule in the process of spreading among unstressed vowels. This introduces the element of arbitrariness which is so important in a subgrouping argument. The outcome was ‘unnatural’ in the sense of Blevins (2004), since the synchronic rule shows neutralisation of a stressed vowel; however, the individual (and sometimes competing) sound changes which produced the outcome were all perfectly natural.

5 Phonetic and phonological effects in sound change

The explanation just offered has in part a phonetic basis and in part a phonological one. Phonetically, it is necessary to assume that *a neutralisation rules, such as (7i) and (7ii), affected only unstressed vowels. What cannot be motivated phonetically is the actual form of (7ii), namely, the fact that velar consonants blocked the spread of the change, whereas labials, dentals, alveolars, and even semivowels and zero, did not. See (11)–(12) above.

The phonological part of the argument benefits from the assumption that the changes raising PMP *a affected a phonological system, and that the system was disrupted by a competing prosodic change, Stress Shift. This is the assumption behind (3) and (7) above. If changes (7i–iv) were systemically connected, then it is convenient to assume that change (7i)—raising of *-a in open final syllables—was the primary change. After all, this change was clearly *phonologically* motivated; it completed the distribution of PMP *ə (schwa),

⁹ This is essentially the form of the argument put forward by Blust (2006 and earlier work) in support of a subgroup he called Proto North Sarawak. See §7 and fn 11.

which did not occur word-finally in PMP. Second, a classic structuralist assumption holds that sound changes are regular because they tend to generalise (or spread) within a phonological system, allophone by allophone (Bloomfield 1929). The model allows for the situation that any generalizing sound change may compete with other sound changes, producing unexpected effects and even sometimes ‘crazy rules’ in contemporary languages (Bach and Harms 1972; Blevins 2004). Such rules are not caused by any lack of regularity of sound change, but by the effects of competing sound changes. As expressed by Blevins (2004:44–45), ‘Changes which occur in the course of evolution are random ... and (do) not necessarily result in a more symmetrical, more stable, or generally improved phonological system.’

6 After-effects of rule (7ii) in Bukar-Sadong and Rejang

The Stress Shift change (7iii) had important drift-theoretical effects in the two languages. Most importantly for this paper, after the protolanguage split into pre-Rejang and pre-Bukar-Sadong, the output of (7ii), namely *-ΛC from PMP *-aC, developed differently. At one and the same time, however, both languages developed seven-vowel systems,¹⁰ and vowel harmony rules which appear to have operated regressively at first, but evolved into synchronic phonological rules operating progressively (and somewhat unnaturally in the sense of Blevins (2004)).

6.1 Bukar-Sadong: a new vowel phoneme /Λ/

In Bukar-Sadong, rule (7ii) added a new allophone [Λ] which subsequently evolved into a new phoneme /Λ/ (contemporary orthographic ě). *Ex hypothesi* the new phoneme /Λ/ began as an allophone in word-final (unstressed) position before Stress Shift, and later, after becoming a stressed vowel, gained phonemic status owing to the effects of a vowel harmony rule. In particular, after Stress Shift had converted allophonic [Λ] into a stressed vowel, it served as trigger for a harmony rule which targeted the destressed reflexes of PMP *a, e.g. *zalan > *jarΛn > /jΛrΛn/ [jrΛtn] ‘road’ (all dialects). A full analysis of this harmony rule remains for future research.

6.2 Rejang: merger of *[Λ] with *ə

By contrast, in Rejang the outcome of (7ii), namely *-ΛC, merged with the reflex of PMP *-eC after the break-up of the protolanguage, becoming Rejang -əC in all dialects. This outcome converged with the outcome of rule (7i), which also partially merged PMP *-a and *-e as *-ə before splitting into Proto Rejang *-əy, *-i, and *-o (McGinn 1997, 2005). These changes yielded two further, and closely-related, effects: (a) schwa came to bear a heavy functional load in the inherited four-vowel system, and (b) the lexicon became governed by height harmony based on the feature [\pm low] (McGinn 1999:226), as follows. Firstly, all words containing the neutral vowel (schwa) became harmonised by default, since schwa was harmonic with every vowel. Secondly, words lacking a schwa underwent eight harmonic changes, e.g. *manuk > *monok ‘chicken’; *laŋit > *lāŋät ‘sky’;

¹⁰ Court (1967) and Topping (1990) ascribe seven-vowel systems to a number of Bukar-Sadong dialects, including the two non-peripheral (central) vowels we have transcribed as /Λ/ and /ə/ (traditional orthographic ě and ũ respectively). However, Topping uses the symbol ə to represent ě (my /Λ/) and the symbol + to represent ũ (my /ə/).

*sapu > *supu ‘broom’; *tali > *tili ‘rope’ (McGinn 1997, 2005; cf. Blust 1984). In the process, Rejang added two new vowels to the phonemic inventory: mid-back /o/ and low front /ä/, owing to the effects of vowel harmony. (A third new vowel, mid front /e/, was added via borrowing from unknown sources (McGinn 2005), resulting in a seven-vowel system for Proto Rejang, and attested in contemporary Rawas.

An interesting twist is that Rejang’s harmony rules applied more or less simultaneously with Stress Shift, affecting the newly stressed final vowels and de-stressed penult vowels. But phonologically, the pattern evolved into a set of inviolable ‘crazy’ rules. In contemporary Rejang, as first noted by Blust (1984), penultimate mid-vowels /e/ and /o/ always co-occur with like vowels in ultimate syllables. According to McGinn (1997, 2005), Rejang’s synchronic mid-vowel harmony rule, which applies progressively, evolved from a historical rule that applied regressively. The synchronic rule is ‘unnatural’ in the sense of Blevins (2004), because unstressed vowels trigger harmony in stressed vowels; but as expected, the historical explanation consists entirely of natural changes.

7 Conclusion

This paper has attempted to explain an unusual comparison by hypothesizing that it was a shared innovation between the Rejang dialect group of Sumatra, Indonesia, and the Bukar-Sadong dialect group of Sarawak, Malaysian Borneo. The comparison involves a change neutralizing PMP *a in word-final syllables ‘except before velars’. In our current state of knowledge, only these two languages show evidence of this comparison, which we have attributed to a common ancestor consisting of just these two languages, named Proto Sadong-Rejang, which was a daughter of Proto Bidayüh-Rejang. (See (1).)

The principal arguments of this paper are of two types—both concerned with the problem of weighing evidence in comparative linguistics. The first argument concluded that one piece of evidence, namely *l > r in Bidayüh languages but not Rejang, is virtually weightless on phonetic grounds, i.e. because it is far too ‘natural’, unpredictable, and ubiquitous to provide useful subgrouping information; hence this evidence has been ignored. The second argument was just the opposite, contending that another piece of evidence should be weighted heavily, namely, PMP *a Raising (neutralisation) in word-final syllables except before velars. What is odd about this change is the conditioning, which (we contend) cannot be explained on phonetic grounds. Moreover, *a Raising occurred in a ‘real’ phonological system being buffeted by a pair of competing sound changes: the spread of *a Raising among unstressed vowels, and Stress Shift, which caused unstressed vowels to become stressed (and vice versa). The competition from Stress Shift blocking the spread of *a Raising resulted in the odd conditioning (‘except before velars’) of *a Raising, traces of which are very much in evidence in contemporary Rejang and Bukar-Sadong dialects, and in no other languages, as far as is known. (See (12).)

Two precedents in the literature lend some theoretical support for the form of our argument. First, Adelaar’s (1992) reconstruction of Proto Malayic demonstrates that a valid subgrouping hypothesis may be supported solely on the basis of common sound changes if there is a sufficient variety of them, in effect interpreting a rich enough *array* of changes as typologically unusual and therefore significant for subgrouping purposes (Adelaar lists eleven such changes as the basis of reconstructing Proto Malayic. In fact, as shown in (13), Proto Rejang and Proto Bukar-Sadong share an impressively rich array of common changes. At the other extreme, Blust (2006 and earlier work) presents a subgrouping hypothesis for Proto North Sarawak based almost exclusively on evidence of

languages exhibiting reflexes and drift-theoretical effects attributed to a series of rare voiced aspirates.¹¹

Our approach shares features with each of these two precedents. Like the evidence for Proto North Sarawak, the evidence for Proto Sadong-Rejang is weighted heavily in favor of a single odd comparison. And like the evidence for Proto Malayic, Proto Sadong-Rejang is also supported by an interesting array of sound changes that are not at all unusual, especially in Borneo. Hypothesis (1) proposes an explanation.

Appendix: The reconstructed phonemes of Proto Rejang and Proto Bukar-Sadong

Proto Bukar-Sadong phonemes are based on the data presented in Appendix B of this paper. Proto Rejang inventories are from McGinn (2005).

Table 1: Proto Rejang phonemes. A-1. Proto Rejang (PR)

	PR Consonants (23)					PR Vowels (7)			
Stops and Affricates	*p	*t	*c	*k	*ʔ	High	*i	*u	
	*b	*d	*z	*g	*j [gʷ]				
Fricative		*s				Mid	*e	*ə	*o
Plain Nasals	*m	*n	*ñ	*ŋ		Low	ä	*a	
‘Barred’ Nasals	*ṁ	*ṅ	*ṅ̃	*ṅ̃					
Liquids	*l		*r			Diphthongs (2)	*iw	*uy	
Semivowels	*w		*y						

PR *ʔ was glottal stop; PR *r was presumably a velar or uvular liquid (reflected as *h* or *ʔ* or zero in contemporary dialects); PR *ä was low, front and unrounded (reflected as /ä/ in Rawas); and the series /*ṁ, *ṅ, *ṅ̃, *ṅ̃/ represents the ‘barred nasals’ (Coady and McGinn 1983). They are regular reflexes of PMP consonant sequences *-mb-, *-nd-, *-nz- and *-ŋg-, respectively.

See McGinn (2005) for extensive discussion of the evidence for Proto Rejang based on data from five contemporary dialects.

¹¹ According to Blust (2000:285), ‘The 15– 20 languages of northern Sarawak form a linguistic subgroup ... defined primarily by a single sound change that left typologically unusual traces in the phonology of its members, including a set of true phonemic voiced aspirates (not murmured stops) *bh*, *dh*, *gh* in Bario Kelabit, corresponding to implosive stops in Bintulu and various Lowland Kenyah dialects, and a synchronic alternation of *b* and *s* in Kiput, reflecting *bh.’ As noted by Kroeger (SMJ 1998:145), ‘(Blust) argues that even though no other significant phonological changes have been found, the Vowel Deletion rule is so well-attested and so unlikely to have spread by borrowing that it must be regarded as outweighing all other kinds of evidence, e.g. lexical isoglosses (Blust 1974a:220).’

Table 2: Proto Bukar-Sadong phonemes. A-2. Proto Bukar-Sadong (PBS)

	PBS Consonants (23)					PBS Vowels (7)		
Stops and Affricates	*p	*t	*c	*k	*ʔ	High	*i	*u
	*b	*d	*j	*g			*ə	
Fricative		*s			*h	Mid	*e	*o
Plain Nasals	*m	*n	*ñ	*ŋ			*ʌ	
‘Barred’ Nasals	*ṁ	*ṅ	*ṇ	*ṅ̃		Low		*a
Liquids	(*l)	*r						
Semivowels	*w		*y			Diphthongs (3)	*ʌy	*w
							*uy	

Symbols have the usual phonetic values except the ‘barred’ nasals (for which see Scott 1964 and Court 1967a, b and 1970).

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