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One Orthography, Four Lects: The Unified Berawan Orthography

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ABSTRACT

Berawan is an endangered Austronesian language family consisting of four lects, which are Batu Belah, Long Teru, Long Jegan, and Long Terawan. Their settlements are located in the Malaysian state of Sarawak. The impetus for a unified orthography came from the Berawan community, who desire to write their lects consistently and reflecting the way they speak. The unified orthography was developed starting with a phonological analysis of the Berawan lects. This was followed by several orthography workshops and discussions with individual Berawan communities, culminating in a combined orthography workshop in which a unified orthography was agreed upon. The aim of the paper is to provide the groundwork for establishing the unifed orthography of the Berawan language family. A phonological comparison of the four Berawan varieties is included for this purpose. The phonological descriptions are taken from Burkhardt (2014). Smalley's (1959, 1965) maxim of 'maximal representation of speech' and Rogers's (2005) 'shallow orthography' approach are employed. On this basis, issues that arise for graphemic representation of Berawan phonemes are then discussed and the decisions made by the participants of the combined workshops are described. The paper also touches on issues encountered throughout the discussion. The issues that arose are primarily related to the differences in orthographic systems between the Berawan lects and the Malay language. The paper ends with a proposed unified Berawan orthography including a comprehensive list of phoneme-grapheme correspondences.

Keywords: *Austronesian; Berawan; Borneo; orthography; phonology*

INTRODUCTION

Berawan is an indigenous community of Sarawak, Malaysia, and there are 12 Berawan settlements along the Tinjar and Tutoh tributaries of the Baram River. There are four Berawan lects, which are Long Terawan Berawan (henceforth LTn, one village along the Tutoh, one village along the Malinau tributary of the Tutoh), Batu Belah Berawan (henceforth BB, three villages along the Tutoh), Long Teru Berawan (henceforth LTu, one village along the Tinjar, one village at Loagan Bunut lake) and Long Jegan Berawan (henceforth LJg, five villages along the Tinjar) (Burkhardt & Burkhardt, 2019). The Berawan languages form a language family of their own (Burkhardt, 2014, Blust, 1974). Blust (1974) and Smith (2017) consider Berawan a member of the North Sarawakian languages. Burkhardt (2014) reconstructed the phonology of Proto-Berawan and suggest that Berawan was once one language community that split first into Proto-West-Berawan (the ancestor of Batu Belah, Long Teru and Long Jegan) and East Berawan (Long Terawan). Then, Proto-West Berawan split into North-West Berawan (Batu Belah and Long Teru) and South-West Berawan (Long Jegan).1 Figure 1 shows the settlement areas of the four Berawan lects.

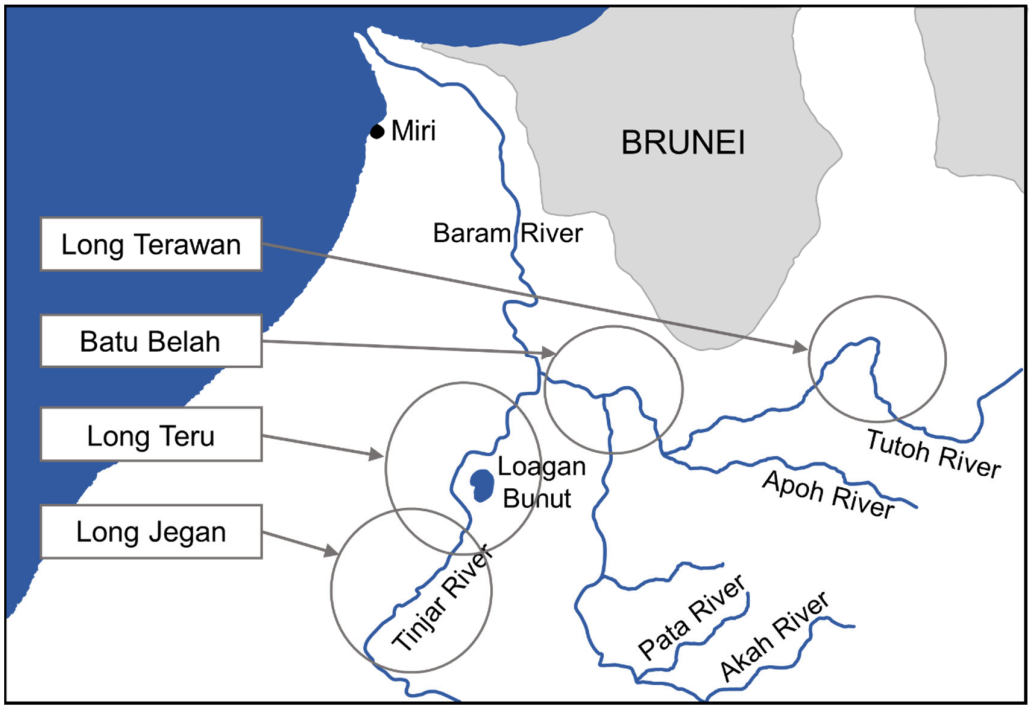

Figure 1. Map of Berawan villages (Burkhardt & Burkhardt 2019, 282)

Thus far, with regard to research on Berawan phonology, the Long Terawan lect received the most attention in the past. Asmah (1983) gives a brief sketch of the phonemes of LTn. Blust (1992) discusses phonemic contrast between short and long consonants in Long Terawan Berawan. Blust (1995) extends the discussion of the phonemic status of geminate consonants

[1] Blust (1974, p. 236) uses geographical labels to distinguish the Berawan lects: West-Berawan for the Long Terawan group, North-West Berawan to refer to Batu Belah and Long Teru Berawan and the label East Berawan to refer to the Long Jegan lect. The ethnologue (Simons & Fennig, 2017) uses the following designators and ISO codes: Berawan, Central (ISO 639-3 zbc) for the Batu Belah and Long Teru varieties (modified from Blust's North-West Berawan), Berawan, East (ISO 639-3 zbe) for the Long Jegan lect and Berawan, West (ISO 639-3 zbw) for the Long Terawan group (in accordance with Blust). Figure 1 shows that the settlements of the Long Terawan speakers are east of the other Berawan groups, Batu Belah and Long Teru are in the centre and Long Jegan is southwest of the latter two. Therefore, Burkhardt (2014, p. 5) relabeled them as East-Berawan (Long Terawan), North-West Berawan (Batu Belah and Long Teru) and South-West Berawan (Long Jegan).

to Berawan in general, adding evidence from the BB and LJg lects. Clayre (1996) describes the vowel and consonant phoneme system of LTn and provides evidence for length contrasts among consonants and vowels. The aforementioned studies only investigate and describe the phonology of one Berawan lect (Long Terawan) and the issue of Berawan consonant gemination in three lects but lack a description of the phoneme inventory of BB, LTu and LJg. Burkhardt (2014), closes that gap by providing a comprehensive description of the system of vowel and consonant phonemes for each of the Berawan varieties. This analysis was used as a basis to discuss and develop a unified Berawan spelling system together with representatives of the various Berawan communities.

In 2017 and 2018, several workshops and seminars were conducted to discuss the possibility of a unified orthography for the Berawan language. The intention was not to have a standard or unified Berawan language. That is, whether the standard Berawan word for 'river', for example, should be LTn <likon> or BB/LTu <likong> or LJg <lékâwng>, but to come to an agreement of a standard orthographic system across the four Berawan lects to write lexical similarities and differences between varieties of Berawan in a consistent way.

The unified Berawan spelling system proposed in this paper was an outcome of the *Berawan Orthography Seminar* in June 2018. Representatives from the Batu Belah, Long Teru and Long Jegan community participated in the seminar.2 For comparison, Long Terawan words were also included in the discussion on the unified Berawan orthography. An appendix is added to explain the differences between the two orthographies.

Burkhardt and Burkhardt (2019) provides a discussion of the development process from individual Berawan orthographies to a unified one in relationship to Smalley's (1959, 1965) five maxims for orthography development, which are (1) maximum motivation for the learner, (2) maximum representation of speech, (3) maximum ease of learning, (4) maximum transfer (from native to trade language) and (5) maximum ease of reproduction. The second maxim refers to an orthography design that is phonemic with a one-to-one correspondence of phoneme and grapheme. This maxim corresponds to the primary wish of the workshop participants who wanted their lects to be written the way they are spoken. The unified Berawan orthography, which is the focus of this article, is charaterised by a one-to-one correspondence of phonemes and graphemes. Therefore, the phoneme inventories of the Berawan lects are compared before phoneme-grapheme correspondences and graphemic decisions are discussed.

Section 2 compares the phonemes of the Berawan lects and Section 3 discusses issues relating to the representation of the phonemes in orthographic forms. The issues mostly relate to underrepresentation in the Malay orthography to reflect phonemic contrast in Berawan lects. Therefore, Section 2 also outlines differences between the phonemes of Berawan lects and the Malay language. Section 3 elaborates on Malay orthographic notations concerning their appropriateness to represent Berawan phonemes as graphemes. Section 4 sketches the proposed unified Berawan orthography and section 5 discusses the reasons why a shallow orthography is more suitable than a deep one for Berawan. Section 6 concludes the study by giving an overview of the phoneme and grapheme correspondences in the Berawan lects. The appendix explains the differences between the unified Berawan orthography and the previously developed Long Terawan spelling system. In running text, square brackets, [...], are used for phones, forward slashes, /.../, for phonemes and pointed brackets, <...> for graphemes. Orthographic notions of

[2] The Long Terawan community was involved in literature production using another orthography, which was proposed by Jürgen and Jey Burkhardt and developed in cooperation with Long Terawan community leaders in 2006 (Panduan Ejaan Otografi Percubaan 2006).

Malay words, however, are mostly not presented in pointed brackets, but in italics, not in brackets, for reasons of better readability. For the same reasons, the orthographic notion of Berawan bases and affixes is presented in italics in Section 5.

PHONEMIC COMPARISON OF THE BERAWAN LECTS

Consonant phonemes

The following single consonant phonemes are found in Berawan lects: Seven stops, *p* [p], *b* [b], *t* [t], *d* [d], *k* [k], *g* [g], and ʔ [ʔ]; two affricates, *c* [c͡ç] and *j* [ɟ͡ʝ]; three fricatives, *v* [β], *s* [s] and *h* [h]; four nasals, *m* [m], *n* [n], *ɲ* [ɲ], *ŋ* [ŋ]; one vibrant, *r* [ɾ]; one lateral , *l* [l]; and two approximants, *w* [w] and *y* [j] (Burkhardt, 2014, Clayre, 1996). They occur in all Berawan languages with the following exceptions: Long Jegan does not possess /h/ and there is no /v/ in Long Terawan. Furthermore, fifteen geminate (= long) consonant phonemes are found in Berawan: p: [p:], b: [b:], t: [t:], d: [d:], c: [c͡ç:], j: [ɟ͡ʝ:], k: [k:], g: [g:], v: [β:], m: [m:], n: [n:], ɲ: [ɲ:], ŋ: [ŋ:], r: [r], and l: [l:], whereas /s/, /w/, /y/ and /ʔ/ do not have geminate counterparts (Burkhardt, 2014, Clayre, 1996, Blust, 1995, Blust, 1992). Table 1 gives and overview of the Berawan consonant phoneme system. Phonemes that are shared among all Berawan lects are set in bold.

Table 1. Comparative Berawan consonant phoneme system

	Bilabial	Alveolar	Palatal	Velar	Glottal
Stops &Affricates					
voiceless	**p – p:**	**t – t:**	**c – c:**	**k – k:**	**ʔ**
voiced	**b – b:**	**d – d:**	**j – j:**	**g – g:**	
Fricatives	v – v:	**s**			h
Nasals	**m – m:**	**n – n:**	**ɲ - ɲ:**	**ŋ – ŋ:**	
Vibrants		**r – r:**			
Laterals		**l – l:**			
Approximants	**w**		**y**		

The Berawan consonant phoneme system possesses some peculiarities that are absent in the respective Malay system. They are (a) phonemic contrasts between single and geminate consonants, as shown in table 2, reproduced from table A2 in Burkhardt and Burkhardt (2019, 301-302); (b) automatic gemination of lengthenable consonants after penult schwa, see table 3, and (c) phonemic contrast of word-final glottal and velar stops and with their absence (-Vʔ : – Vk : -VØ, see table 4).

Table 2. Phonemic contrasts between single and geminate Berawan consonants

Contrast	**Berawan lects**	***-C-***	***English***	**Berawan lects**	***-C:-***	***English***
p – p:	all	na**p**an	winnow	all	na**p:**an	slap (v)
b – b:	all	a**b**an	widower	BB/LTu/LJg LTn	ga**b:**ân ga**b:**âl	picture (n)
v – v:	BB/LTu LJg	su**v**ât co**v**ât	sago worm	BB LTu LJg	su**v:**a cu**v:**a co**v:**a	dowry
t- t:	BB/LTu/LTn LJg	ki**t**âh ke**t**a	we (incl)	BB/LTu/LTn LJg	ki**t:**âh ke**t:**a	see (v)
d –d:	all	pa**d**iʔ	sibling	BB/LTu/LJg LTn	pa**d:**in ba**d:**in	cannon
c –c:	all	ma**c**ak	ripe	all	ma**c:**âm	sour
j –j:	all	ni**j**uʔ	point at	BB/LTu LTn LJg	u**j:**uh u**j:**ûh u**j:**əw	crab
r –r:	BB/LTu LTn LJg	ma**r**eh ma**r**êh ma**r**ây	eight	BB/LTu LTn LJg	ta**r:**eh ta**r:**êh ta**r:**ây	younger sibling
l –l:	BB/LTu/LTn LJg	mu**l**a mo**l**a	mad	BB/LTu/LTn LJg	mu**l:**âh mo**l:**a	plant (v)
k – k:	all	a**k**a	tree creeper	all	ja**k:**aʔ	time, season
g – g:	all	pa**g**in	fence (n)	BB/LTu LTn LJg	ma**g:**ən ma**g:**în me**g:**əm	obstruct, forbid make a fist
m –m:	all	ta**m**am	your father	*BB/LTu/LTn* *LJg*	ta**m:**âh ta**m:**a	father (s.o. else's)
n –n:	all	ma**n**ay	male animal	all	ma**n:**ay	skilled
ɲ - ɲ:	BB/LTu/LJg LTn	la**ɲ**i na**ɲ**i	angry	BB/LTu LTn LJg	la**ɲ:**ih la**ɲ:**îh la**ɲ:**əy	slippery
ŋ – ŋ:	BB/LTu/LJg LTn	a**ŋ**ap a**ŋ**aʔ	wide open mouth	BB/LTu/LTn LJg	na**ŋ:**âh na**ŋ:**a	sago (uncooked)

Geminate consonants only appear between vowels and the vowel preceding the geminate consonant is pronounced extra short, whereas a vowel preceding a single consonant is pronounced medium short. For example, the /a/ before /p:/ in /nap:an/ 'slap (v)' is pronounced extra short whereas the /a/ before /p/ in /napan/ 'winnow' is pronounced medium short. The neutral vowel /ə/ [ə] is always pronounced extra short. Therefore, all consonants become long after /ə/, as shown in table 3.

Table 3. Gemination of consonants after the neutral vowel /ə/ in Berawan

	Berawan lects	-əC:	English
əp:	BB/LTu/LJg LTn	jələ**p:**i gələ**p:**e	nine
əb:	all	kə**b:**i	carry on the back
ət:	BB/LTu/LTn LJg	lə**t:**âh lə**t:**a	die / dead
əd:	BB/LTu LJg LTn	pə**d:**ung pə**d:**əwng pə**d:**ûng	music made with gongs
əc:	all	kə**c:**en	hard (e.g. a punch)
əj:	all	kə**j:**in	durian
ək:	all	pə**k:**u	nape
əg:	BB/LTu/LJg LTn	mə**g:**əm mə**g:**ûm	make a fist
əm:	BB/LTu/LJg LTn	lə**m:**âk lə**m:**âʔ	fat (adj)
ən:	all	tə**n:**an	remember
əɲ:	BB/LTu LJg LTn	mə**ɲ:**ik mə**ɲ:**əyk mə**ɲ:**əyʔ	press (v)
əŋ:	BB/LTu/LTn LJg	sə**ŋ:**ga cə**ŋ:**a	nasal mucus
əl:	all	ngə**l:**âp	wipe, mob
ər:	BB/LTu/LJg LTn	tə**r:**aʔ tə**r:**âh	ironwood

The glottal stop is clearly a phoneme in Berawan lects, since it contrasts with [k] intervocalically, as shown in table 4 and it also contrasts with [k] and with its absence in word-final position, as demonstrated in table 5.

Table 4. Contrast of Berawan /-ʔ-/ (glottal stop) with /-k-/ in intervocalic position

Berawan lects	V′V	English	Berawan lects	VkV	English
BB/LTu/LJg LTn	a**ʔ**an ba**ʔ**an	where place (n)	all	na**k**an	A type of jack fruit – *cempedak*
BB/LTu LTn LJg	bi**ʔ**oh bi**ʔ**ôh be**ʔ**âw	smell / stench ~~(n)~~	BB/LTu/LTn LJg	i**k**o e**k**o	tail
BB/LTu/LTn LJg	lu**ʔ**ong lo**ʔ**âwng	fruit	BB/LTu LTn LJg	mu**k**ong mu**k**on mo**k**âwng	old

Table 5. Contrast of Berawan /-ʔ/ (glottal stop) with /-k/ and /-Ø/

Berawan lects	-Vʔ	English	Berawan lects	-Vk	English	Berawan lects	-VØ	English
	-aʔ			**-ak**			**-a**	
BB/LTu/LJg	man**a**ʔ	boil (v)	all	an**ak**	child	all	tan**a**	soil
LTn	saw**a**ʔ	long-house veranda	all	taw**âk**	type of gong	all	saw**a**	valley
BB/LTu/LJg	aw**a**ʔ							
	-iʔ			**-ik**			**-i**	
all	padi**i**ʔ	sibling	BB/LTu	mad**ik**	slice (v)	BB/LTu/	ad**i**	light
			LJg	d**ik**	chicken	LTn		
			LTn	d**ik**	little	LJg	beledd**i**	bucket
	-eʔ			**-ek**			**-e**	
all	ar**e**ʔ	betel leaf	BB/LTu	par**ek**	shave (v)	all	kar**e**	grass-hopper
			LJg	bor**ek**	rice wine			
	-oʔ			**-ok**			**-o**	
BB/LTu/LTn	tiny**o**ʔ	banana	BB/LTu	uny**ok**	peak	BB/LTu/	bun**o**	enemy
LJg	teny**o**ʔ					LTn		
						LJg	bon**o**	
	-uʔ			**-uk**			**-u**	
all	nij**u**ʔ	point at	all Berawan	dud**uk**	pawn (v)	BB LTu/LJg	sij**u**	fish
							cij**u**	
						LTn	paj**u**	scold

In Malay, on the other hand, the phonemic status of the glottal stop has been disputed among linguists (Prentice 1990, p. 189). The glottal stop appears as "a predictable, non-phonemic transitional phenomenon between two vowels of which the first is a or e or between two identical vowels" (Prentice 1990, p. 189). If it appears to combine a CV- prefix with a vowel-initial base, as in /se-ekor/ [səʔəkor] 'one (animal)' or /se-umur/ [səʔumur] 'of the same age' or to add a VC- suffix to a vowel-final base, as in /ke-ada-an/ [kəʔadaʔan] 'condition, situation' or /per-taŋa-an/ [pərtaŋaʔan] 'question', the glottal stop is predictable. However, if the glottal stop occurs in bases, which is the case in a limited number of Arabic loanwords, phonemic contrast with the velar stop has developed in that position, for example in /saʔat/ 'second (unit of time), moment' : /zakat/ 'alms', and /faʔal/ 'sign, omen' : /pakal/ 'caulking'.

In word-final position, [k] and [ʔ] were originally not contrastive. In inherited vocabulary, the glottal stop is an allophone of phoneme /k/, which is realised as [ʔ] in word-final position, but as [k] elsewhere in Malaysian Malay (cf. Tadmor 2009, p. 796). However, loanwords with invariable word-final [k] have introduced phonemic contrast, for example in ~~fisik~~ /fisik/ [fisik] 'physical' versus ~~bisik~~ /bisiʔ/ [bisiʔ] 'whisper' (Prentice 1990, p. 189).

Monophthong phonemes

Berawan possess monophthongs, diphthongs, and one lect, Long Jegan, also exhibits triphthongs. All Berawan lects possess the monophthong phonemes /i/ [i(:) ~ ɪ(:)], /e/ [e(:) ~ ɛ(:)], /ə/ [ə], /a/ [ɑ:], /â/ [ɐ ~ ɑ], /u/ [u(:) ~ ʊ(:)] and /o/ [o(:) ~ ɔ(:)]. There are two low vowel phonemes, /a/ and /â/, with the same or overlapping vowel qualities. They exhibit a phonemic length contrast limited to the ultima, whereby /â/ is pronounced extra-short and /a/ medium-long to long. Long Terawan exhibits this length contrast not only for the low vowel, but also for all other non-neutral vowels: /i/ : /î/, /e/ [e:] : /ê/ [ɛ], /u/ [u:~ʊ:] : /û/ [ʊ] and /o/ [o:] : /ô/ [ɔ]. Table 6 shows the Berawan monophthong phonemes. Shared phonemes are presented in bold.

Table 6. Comparative Berawan monophthong phoneme system

	front	central	back
high	i – î		u – û
mid	e – ê	ə	o – ô
low		a – â	

Table 7 gives evidence for phonemic length contrast of /a/ versus /â/ (cf. table A5, Burkhardt & Burkhardt 2019, 303) and table 8 provides such proof for all non-neutral monophthongs in Long Terawan Berawan.

Table 7. Contrast between Berawan /a/ and /â/

Berwan lects	-a-	English	Berawan lects	-â-	English
BB/LTu	caŋ	wild	BB/LTu	câŋ	earrings
LJg	pəl:am	mango	LJg	lâm	knee
BB/LTu/LTn	utan	daughter	BB/LTu/LTn	utân	do!
LJg	otan	whose father died	LJg	otân	(Imperativ)
BB/LTu/LTn	kil:an	carry with	BB/LTu/LTn	dilân	housefly
LJg	kel:an	two arms	LJg	delân	
all	kam	you (pl)	all	kâm	basket

Table 8. Contrast between long and short Long Terawan vowels

Contrast	LTn	English	LTn	English
i – î	usin	rain	usîn	money
e – ê	kat:eʔ	throw away	mat:êʔ	throw (v)
a – â	nakan	was fed	nakân	climb (v)
u – û	laduŋ	crash (v)	gad:ûŋ	green
o – ô	nipoʔ	put together	nipôʔ	surround (v)

In terms of vowel quality, Berawan lects have, like Malay, six monophthong phonemes: /i/, /e/, /ə/, /a/, /u/, /o/. However, the two systems differ in terms of the phonemic status of vowel length. In Malay, vowel length differences are merely phonetic, but in Berawan lects, there is a phonemic length contrast for the low vowel and the Long Terawan lect exhibits that contrast for all non-neutral vowels.

Furthermore, Berawan lects show, like Malay, a phonemic contrast between the mid-front vowel /e/ and schwa. However, the contrast occurs mostly in different syllable environments. In Malay, the contrast is only found in the penult, as for example in ~~*perang*~~ /peraŋ/ [pɛraŋ] 'brown': ~~*perang*~~ /pəraŋ/ [pəraŋ] 'war', since Malay does not possess a schwa phoneme in the closed ultima. In three Berawan lects (BB, LTu, LJg), however, this contrast occurs in the closed ultima but not in the penult. In Long Jegan Berawan, in the other hand, it is also found in the penult. In the Long Terawan lect, the contrast between the two monophthongs is neutralized, since schwa occurs only in the penult whereas the mid-front vowel is only found in the ultima. Table 9, reproduced from table A4 in Burkhardt and Burkhardt (2019, 302), gives evidence for the phonemic contrast between /e/ and /ə/ in Berawan lects.

Table 9. Contrast between Berawan /e/ and /ə/

Berawan lect(s)	-e-	English	Berawan lects	-ə-	English
BB/LTu/LJg	cen	strength	BB/LTu/LJg	cən	animal
BB/LTu	aneŋ	ear	LTu	maməŋ	dumb
BB/LTu	bikeŋ	spear	BB/LTu/LJg	dikən	iron
BB/LTu LJg	ɲipen ɲepen	things	BB/LTu/LJg	jipən	tooth
LJg	tellân	was swallowed	LJg	təllân	to swallow
LJg	teppâw	was softened	LJg	təppâw	soft

Diphthong phonemes

Eleven diphthong phonemes are found in Berawan (see table 10), but only the Long Jegan lects exhibits all of them. All Berawan lects share the dipthongs /ay/, /aw/, /ew/, /iw/, /oy/ and /uy/. Long Jegan and Long Terawan also possess the extra-short diphthongs /əy/, /əw/, /ây/ and /âw/. The latter two show a phonemic length contrast of the diphthong's base vowel in the pairs /ay/ : /ây/ and /aw/ : /âw/. Table 11 provides evidence for that contrast. Long Jegan also possesses dipthong /iə/. Long Teru exhibits /əw/ and /iə/ only in rare occurrences (see table 10). The base vowels in the diphthongs have the same phonetic values as the monophthongs described above. Diphthongs /ây/, /âw/, /ey/ and /ew/ are pronounced extra short, the other diphthongs are uttered long or medium long (Burkhardt 2014).

Table 10. Berawan diphthongs

	Batu Belah	Long Teru	Long Jegan	Long Terawan	English
ay	malay	malay	malay	malay	familiar
ây	---	---	parâyk	parâyʔ	shave (v)
aw	mutaw	mutaw	motaw	mutaw	tired
âw	---	---	lamâwk	lamâwʔ	yeast
ew	arew	arew	arew	arew	rectum
əy	---	---	kip:əyk	kip:əyʔ	lift up
əw	---	jajəw			sell (v)
			kikəwk	kəwʔ	pluck (v)
iə	---	diək		---	chicken,
			jer:iət		trap
iw	ladiw	ladiw	ladiw	ladiw	loud voice
oy	mattoy	mattoy	mattoy	mattoy	the Great Hornbill
uy	ŋejuy	ŋejuy	ŋejuy	ŋejuy	shout (v)

Table 11. Phonemic length contrasts between LJg and LTn /ay/ : /ây/ and /aw/ : /âw/

Contrast	Berawan lects	ay/aw	English	Berawan lects	ây/âw	English
ay– ây	LJg	paray	rice plant	LJg	parâyk	shave (v)
	LTn	layʔ	displeased	LTn	lâyʔ	upper arm
aw – âw	LJg	tawŋ	year	LJg	tâwŋ	top end (of a tree)
	LTn	mawʔ	drunk	LTn	gimâwʔ	root

Malay, on the other hand, has only two diphthongs, /ay/ and /aw/ (Prentice, 1990), limited to word-final occurrence as in /suŋay/ 'river', /limaw/ 'orange/lime/lemon'.

Triphthong phonemes

There are two Berawan triphthongs, /iəy/ [iᵊᶦ] and /iəw/ [iᵊᵘ].. They occur in Long Jegan as in: /bet:iəyk/ 'tatoo/ornament/engraving', /pelip:iəyng/ 'side of the body', /tikiəy/ 'traditional sarong with beautiful motives', /gusiəwk/ 'chest', /tebut:iəwng/ 'festive hat with long feathers' and /buk:iəw/ 'node' (Burkhardt 2014). Neither the other Berawan lects nor Malay have triphthongs.

Clusters of vowel phonemes

Vowel clusters are vowels that are not separted by a consonant, but merely by a syllable break. Berawan lects exhibit a large diversity of vowel clusters that does not only include monophthong clusters, but also clusters whereby a monophthong is followed by diphthong. Table 12 lists the various clusters found in Berawan lets. Malay, on the other hand, only possesses the monophthong clusters /a.i/, /a.u/, /i.a/, /i.u/, /u.a/ and /u.i/, as for example in /ka.in/ 'cloth', /ga.ul/ 'mix something.', /di.a/ 'he/she/it', /ti.up/ 'blow (v)', /ru.aŋ/ 'space', and /ku.ih/ 'cake'.

Table 12. Berawan vowel clusters

Vowel cluster	Batu Belah	Long Teru	Long Jegan	Long Terawan	English
i.a	bi.a	bi.a	bi.a	bi.a	slow
i.âw	---	---	di.âwŋ	---	leaf
i.əw	---	---	wi.əwŋ	ji.əwʔ	there is, skewer
i.e, i.ê	li.eʔ	li.eʔ	li.eʔ	i.êʔ	louse egg, vein
i.o	di.o	di.o	di.o	di.o	far
i.u, i.û	seki.uʔ	seki.uʔ	---	seki.ûʔ	kettle
u.â	bu.âŋ	u.âŋ	u.âŋ	bu.âŋ	beetle
u.a	bu.an	bu.an	bu.an	su.an	song of merriment
u.ay	---	u.ay	u.ay	du.ay	rattan, sibling-in-law
u.âw	---	---	pu.âwŋ	---	tree trunk
u.aw	bu.aw	bu.aw	bu.aw	bu.aw	to migrate
u.e	ngelu.eʔ	ngelu.eʔ	ku.e	ngelu.eʔ	tease (v), cat-eyes fruit
u.ə	ketu.ən	---	tegu.ən	---	hiccup
u.i	---	---	bu.iəŋ	mu.i	sweat (v), clean (v)
a.i	ka.in	ka.in	ka.in	ma.i	cloth, river rapids
a.o	---	---	---	ta.on	needle
a.u	ga.un	ga.un	ga.un	təla.u	dress (n), barking deer
a.a	---	---	pa.at	---	seriously ill

UNIFIED ORTHOGRAPHY ISSUES AND DECISIONS MADE

In this section, the orthographic issues faced by the workshop participants and the decisions made are described. The Berawan are familiar with the Malay orthography. The issues in the choice of graphemes for a unified Berawan orthography relate primarily (1) to the unsuitability of Malay orthographic notations to capture phonemic contrasts that Berawan lects possess but Malay lacks and (2) to contrasts Malay and Berawan lects share but that are underrepresented in Malay orthography.

Consonant graphemes

Except for the glottal stop, all the single consonants phonemes listed above, which are /p, b, t, d, c, j, k, g, v, s, h, m, ɲ, ŋ, r, l, w and y/ did not require any discussion, since they are also phonemes in Malay and used with the same phonetic values in Malay.3 Malay uses the same graphemes for them, except for the palatal and velar nasal, /ɲ/ and /ŋ/, where it employs the

[3] Berawan phoneme /v/ is a vocied bilabial fricative [β] whereas Malay /v/ is a voiced labio-dental fricative [v] (Prentince 1990, p. 189). Due to the close phonetic relatedness of the two sounds and the absence of [v] in Berawan lects, the workshop participants used /v/ for [β] intuitively and consistently.

digraphs <ny> and <ng> respectively. Berawan speakers, who are generally literate in Malay below the age of 70, used them intuitively in spontaneous Berawan story writing exercises the same way they read and write Malay. Thus, they could be readily used as Berawan consonant graphemes.

The notation of the glottal stop, on the other hand, was an issue. In Malay, the glottal stop is rendered <k> in word-final position and not noted at all graphemically in intervocalic position. This is understandable since phonemic contrast with /k/ in both environments has only been introduced through loanwords. In Berawan lects, on the other hand, the glottal stop appears contrastively with inherited vocabulary in both syllable environments (see tables 4 and 5 above). The workshop participants, therefore, did not want to omit it and preferred to mark it with a symbol different from <k>. It could be either written as <q>[4] or as an apostrophe < ′ >. There was a general preference among them to write the glottal stop as < ′ >, both in intervocalic and word-final position. This preference is in line with how the glottal stop has been written in vernacular literature of neighboring languages, like in the Lun Bawang New Testament (Bala Luk Do', 1998), the Kayan bible (Surat Tuhan 1990) and the Kenyah Lepu' Tau New Testament (Kitab Tuket Mading 1987).

As for the graphic rendering of geminate consonants, the workshop participants agreed to write the long consonants with two consonant symbols, for example <bb>, <cc>, <vv> etc. However, they decided against doubling <ng> and <ny> as <ngng> and <nyny> and preferred to write <nng> and <nny> instead to avoid long strings of letters.

Monophthong graphemes

Concerning the orthographic notation of monophthongs, two issues arose. The first issue was whether to write phonemically contrastive schwa and the mid-front vowel with two different symbols or not. The Berawan are used to the Malay orthography in which this distinction – although phonemic – was dropped in its 1972 orthography revision (Ismail, 2000). Berawan /e/ is pronounced like 'e taling' [ɛ] in Malay ~~<perang>~~ *perang* /peraŋ/ [pɛɾɑŋ] 'brown' whereas Berawan /ə/ is pronounced like 'e pepet' [ə] in Malay <~~perang~~> *perang* /pəraŋ/ [pəɾɑŋ] 'war'.

The community representatives in the Berawan orthography seminar decided to distinguish the two vowels by using an acute as diacritic for the mid-front vowel (<é>) to distinguish it from the neutral vowel (<e>). This is the way Malay orthography used to distinguish them in their pre-1972 orthography.

The second issue discussed in the orthography seminar was how to distinguish phonemic vowel length, a phenomenon which does not occur in Malay. The participants expressed their wish to distinguish long and short 'a' orthographically. Two possibilities were discussed, namely (1) to note short 'a' as <a> and long 'a' as <aa> or (2) to represent long 'a' as <a>, but short 'a' with a diacritic, for example <â>. Whereas each option would have worked for three Berawan lects, the Long Jegan lect has at least one instance of an /a.a/ vowel cluster, which creates a three-way contrast in /peppât/ 'crushed' : /pat/ 'chisel' : /pa.a/ 'seriously ill'. To be able to represent this three-way contrast orthographically, Long Jegan representatives in particular vouched for the second solution[5], which was then also adopted by representatives of the other Berawan lects. The circumflex (<â>) was chosen as the diacritic since it can be typed on a virtual smartphone keyboard. By holding the 'a' key, a list of 'a' symbols with diacritics appears which

[4] Grapheme <q> could be used to denote the glottal stop since Berawan lects do not possess uvular stops.

[5] If <a> had been chosen to note the short vowel and <aa> the long one, both [ɑː] and [ɑ.ɑ] would have to be presented as <aa>, since <aaa> was not acceptable to the participants to write vowel cluster [ɑ.ɑ].

contains <â>. Moreover, the circumflex is more visible and less easy to forget to write than an acute or graph <á> or <à>. Furthermore, the community's decision considers the fact that long vowels are much more frequent than short ones. Thus, the decision to write the less frequent vowel with a diacritic but the more frequent one without it is also economical. Long Terawan, on the other hand, has contrasts not only between short and long 'a', but also for other non-neutral vowels, as table 8 shows.

Therefore, if the unified orthography is applied to Long Terawan, the following pairs between long and short vowels are needed (whereby all short vowels in the pairs are noted with a circumflex diacritic): <a - â, é – ê, e, i – î, o – ô, u – û>. The neutral vowel <e> does not have a long counterpart and therefore does not need a diacritic. Currently, the Long Terawan community is using their own orthography. Therefore, the differences in how vowels are written in the Long Terawan orthography and in the unified Berawan orthography are described in Appendix 1. Consonants are written the same way in both orthographies.

Diphthong graphemes

The workshop participants decided to use the same base vowel notations for the diphthongs as they had agreed upon for the monopthongs, that is <a>, <â>, <e>, <é>, <i>, <u> and <o>. However, they were split on the notation of the offglide. Some preferred notions like <ai>, <âi>, <éi>, <âi>, <au>, <âu>, <iu> and <ui> in accordance with Malay orthography, which presents the offglide of a diphthong with a vowel symbol, as <ai> /ay/ in <sungai> 'river' and <au> /aw/ in <limau> 'lime / lemon'. Other participants favoured to write the offglide with an approximant symbol: <ay>, <ây>, <éy>, <ây>, <aw>, <âw>, <iw> and <uy>. Among the latter group were a village chief and a former village chief who swayed the opinion of the whole group towards the latter option. Like with monophthongs, the circumflex diacritic on <â> indicates an extra-short diphthong. The notation of diphthong /iə/, on the other hand, was a not an issue. There was a general consensus to write it /ie/.

Triphthong graphemes

Since triphthongs only occur in the Long Jegan lect, it was up to the participants from that language group to decide on the graphemic rendering of the two LJg triphthongs, which are /iəy/ and /iəw/. Following their decision to write diphthong /iə/ as <ie> and to write a high front vowel offglide of a triphthong with approximant symbol /y/, the LJg participants perceived <iey> and <iew> as suitable graphemic notions, and no further discussion evolved on them.

Graphemic notion of vowel clusters

Vowel clusters can be orthographically noted as two adjacent vowels, as in <ia>, <iâw>, <ié>, <ua>, <ué> and <iyu> etc. On the other hand, an approximant can be inserted in case the cluster starts with a high vowel. So, the above clusters could be alternatively written <iya>, <iyâw>, <iyé> <uwa>, <uwé> and <iyu>, without a change in pronunciation. In Malay orthography, vowel clusters that occur in CV.VC environments are written without an intervening consonant, as in *kain* /ka.in/ 'cloth', *gaul* /ga.ul/ 'to mix something', *dia* /di.a/ 'he/she/it', *tiup* /ti.up/ 'blow (v)', *ruang* /ru.aŋ/ 'space', and *kuih* /ku.ih/ 'cake'. There is a rare word-final /Ca.i/ environment in which Malay uses an intervening approximant, as in *bayi* /ba.i/ 'baby'.

If <i> is followed by another vowel, the orthography seminar participants preferred to insert <y> after <i>, as in <iya>, <iyâw>, <iyew>, <iyé> and <iyu>. Likewise, they decided to insert <w> after <u> if it is followed by another vowel, as in <uwa>, <uwây>, <uwâw>, <uwaw>, <uwé>, <uwe> and <uwi>.

On the other hand, vowel clusters that begin with a low vowel and end with a high one, as in [ai], [ao] and [au] they preferred to write as <ai>, <au> and <ao>, not as <ayi>, <awu> or <awo>. These clusters occur in native Long Terawan vocabulary in CV.VC and CV.V disyllables but in other Berawan varieties only in some Malay CV.VC loanwords.

PROPOSED UNIFIED BERAWAN ORTHOGRAPHY

Based on the graphemic decisions made by the orthography workshop participants, the proposed unified Berawan orthography possesses the vowel and consonant symbols shown in Figure 2.

a â	b bb	c cc	d dd	e	é ê	g gg	h	i î	
j jj	k kk	l ll	m mm	n nn	ng nng	ny nny	o ô	p pp	
r rr	s	t tt	u û	v vv	w	y	ʼ		

Figure 2. Berawan letters

The vowel symbols <ê, î, ô, û> that are not put in bold are only needed for Long Terawan. The other symbols are needed for all Berawan languages except for <v >and <vv>, which do not occur in Long Terawan and <h>, which is not found in Long Jegan.

Table 13 provides an overview of the Berawan consonant and vowel graphemes separately listed as simple consonants, long consonants, extra-short vowels, (mid-)long vowels, extra-short diphthongs, (mid-)long diphthongs, triphthongs, and vowel clusters.

Table 13. Berawan consonant and vowel graphemes

simple consonants	long consonants	extra-short vowels	(mid-)long vowels	triphthongs
b	bb	â	a	iey (LJg)
c	cc	e		iew (LJg)
d	dd	ê (LTn)	é	vowel & diphthong
g	gg	î (LTn)	i	clusters
h	---	ô (LTn)	o	iyâw, iyew
j	jj	û (LTn)	u	uway, uwâw, uwaw
k	kk	extra-short	(mid-)long	vowel clusters
l	ll	diphthongs	diphthongs	(two vowels)
m	mm	ây (LJg/LTn)	ay	ai
n	nn	âw (LJg/LTn)	aw	au
ng	nng	ey (LJg/LTn)		ao (LTn)
ny	nny	ew (LJg/LTn/LTn)	éw	iya
p	pp			iye
r	rr			iyé
s	--			iyu
t	tt		iw	iyo
v	vv		oy	uwa, uwâ
w	--			uwe
y	--			uwé
ʼ	--		uy	uwi

SHALLOW OR DEEP ORTHOGRAPHY?

Rogers (2005, pp. 177-181) elaborates on two types of linguistic orthographies, shallow (phonemic) and deep (morphophonemic) orthographies. To use a Berawan example, the base BB/LTu *pinngât*, LJg *pénngât*, LTn *pinngê'* 'throwing' combines with nasal replacement prefix *ng-* 'active verb marker' to create the active verb BB//LTu *ng-pinngât*, LJg *ng-pénngât* and LTn *ng-pinngê'* 'to throw'. The prefix assimilates first to the place of articulation of the base-initial consonant before replacing it. The affixed verb would be written in a shallow orthographic notion as BB/LTu *minngât*, LJg *ménngât* and LTn *minngê'*, or in a deep notion as BB/LTu *ngpinngât*, LJg *ngpénngât* and LTn *ngpinngê'*. Part of the orthography workshop was a story writing exercise in the four Berawan lects. The participants intuitively used a shallow orthographic notation, which is not surprising since Malay also employs a shallow notation, as in *meng-baling* → *membaling* 'to throw' (not *mengbaling*) and *meng-pandu* → *memandu* 'to guide / lead / drive' (not *mengpandu*).

Other prefixes in Berawan lects do not pose orthographic issues since they are either of the shape CV- combining with consonant-initial bases, as *pe-* in BB/LTu *pe-luttok*, LTn *pe-luttô'* and LJg *pe-lotâwk* 'to make something float'; or of the shape C- (other than *ng-*) selecting vowel-initial bases, as in all Berawan *p-addu'* 'to bathe someone'. Berawan lects also possess -VC- infixes selecting consonant-initial bases, as *-en-* in all Berawan *t-en-akaw* 'was stolen' and -V- Ablaut replacing penult schwa in a base, as *-i-* in BB/LTu *d-i-kkep*, LJG *d-i-kkiep* and LTn *d-i-kkâ'* 'was held by someone'. The infixes and Ablaut forms also did not pose any orthographic issue to the participants.

CONCLUSION

The unified Berawan orthography, which evolved as a consensus among representatives from three Berawan lects (BB, LTu and LJg) in the combined Berawan orthography workshop in June 2018, is characterised by a one-to-one correspondence between phonemes and graphemes. The equivalences between them are shown in table 14, which reproduces table 13 but adds phoneme-grapheme correspondences. Graphemes are presented italicised in the table, whereas phonemes are shown unitalicised.

Table 14. Berawan phoneme – grapheme correspondences

simple consonants	long consonants	extra-short vowels	(mid-)long vowels	triphthongs
b - *b*	b: - *bb*	â - *â*	a - *a*	iəy - *iey* (*LJg*)
c - *c*	c: - *cc*	ə - *e*		iəw - *iew* (*LJg*)
d- *d*	d: - *dd*	ê - *ê* (*LTn*)	e - *é*	**vowel & diphthong clusters**
g - *g*	g: - *gg*	î - *î* (*LTn*)	i - *i*	
h - *h*	---	ô - *ô* (*LTn*)	o - *o*	i.âw - *iyâw*, i.əw - *iyew*
j - *j*	j: - *jj*	û - *û* (*LTn*)	u - *u*	u.ay/w - *uway/w*, u.âw - *uwâw*
k - *k*	k: - *kk*	**extra-short diphthongs**	**(mid-)long diphthongs**	**vowel clusters (two vowels)**
l - *l*	l: - *ll*			
m - *m*	m: *mm*	ây - *ây* (*LJg/LTn*)	ay - *ay*	a.i - *ai*
n - *n*	n: - *nn*	âw - *âw* (*LJg/LTn*)	aw - *aw*	a.u - *au*
ŋ - *ng*	ŋ: - *nng*	əy - *ey* (*LJg/LTn*)		a.o - *ao* (*LTn*)
ɲ - *ny*	ɲ: - *nny*	əw - *ew* (*LJg/LTn/LTn*)	ew - *éw*	i.a - *iya*
p - *p*	p: - *pp*			i.ə - *iye*
r- *r*	r: - *rr*			i.e - *iyé*
s- *s*	--			i.u - *iyu*
t- *t*	t: - *tt*		iw - *iw*	i.o - *iyo*
v- *v*	v: - *vv*		oy - *oy*	u.a - *uwa*, u.â - *uwâ*
w- *w*	--			u.ə - *uwe*
y - *y*	--			u.e - *uwé*
ʔ - ’	--		uy - *uy*	u.i - *uwi*

The community decisions made on the unified Berawan spelling system in June 2018 can be considered a milestone to facilitate the production of written materials in the various Berawan lects. The unified spelling system provides a consistent framework to write identical phonemes in the same way across the different Berawan lects, but also to note differences in a consistent and thus comparable way. Hasselbring's (2005) experience with orthography development in Botswana shows that if sufficient time is allowed for learning orthography, and adapting to it, it stands a good chance of gradual acceptance. The question remains whether the system will be widely used in Berawan writing and social media messaging in the future and whether it will be easy to implement. To date, we have seen the interest in writing waxing and waning. Thus, a more empirical study to monitor and evaluate the successful use of the orthography is warranted.

REFERENCES

Asmah Bt Hj. Omar. (1983). *The Malay Peoples of Malaysia and Their Languages*. Kuala Lumpur: Dewan Bahasa dan Pustaka.

Bala Luk Do': Buri Lun Bawang Luk Titen Buri Lun Dayeh Teh (1998). Petaling Jaya, Selangor Darul Ehsan: Bible Society of Malaysia.

Blust, R. A. (1995). Notes on Berawan Consonant Gemination. *Oceanic Linguistics, 34(1)*, 123-138. https://doi.org/10.2307/3623115.

Blust, R. A. (1992). The Long Consonants of Long Terawan. *Bijdragen Tot De Taal-, Land- En Volkenkunde / Journal of the Humanities and Social Sciences of Southeast Asia 148(3*), 409–427. https://doi.org/10.1163/22134379-90003144.

Blust, R. A. (1974). *The Proto-North Sarawak Vowel Deletion Hypothesis* (Unpublished doctoral dissertation). USA: University of Hawaii, Manoa.

Burkhardt, J.L., & Burkhardt, J.M. (2019). Developing a unified orthography for Berawan: An endangered Bornean language. *Written Language & Literacy, 22(2)*, 280-306. https://doi.org/10.1075/wll.00029.bur.

Burkhardt, J.M. (2014). *The reconstruction of the phonology of Proto-Berawan* (Doctoral dissertation). https://www.academia.edu/33800852/The_reconstruction_of_the_phonology_of_Proto-Berawan.

Clayre, B., & D.B. Wan (1996). An introduction to Berawan phonology. *Sarawak Museum Journal 71*, 209-240.

Hasselbring, S. (2005). *It is for us! The acceptance of writing systems in minority languages.* Fourth Pan-African Reading for All Conference. Ezulwini, Swaziland.

Ismail Dahaman. (2000). *Pedoman ejaan dan sebutan Bahasa Melayu*. Kuala Lumpur: Dewan Bahasa dan Pustaka.

Kitab Tuket Mading (1987). Singapore: The Bible Society of Singapore, Malaysia & Brunei.

Prentice, D.J. (1990). Malay (Indonesian and Malaysian). In B. Comrie (Ed.), *The major languages of East and South-East Asia* (pp. 185-207). London: Routledge. (Original work published 1987).

Rogers, H. (2005). *Writing Systems: A Linguistic Approach*. Malden, MA: Blackwell Publishing.

Simons, G., & C.D. Fennig. (2017). *Ethnologue: Languages of the World.Twentieth Edition*. Dallas, Texas: SIL International.

Smalley, W.A. (1965). *Orthographic studies: Articles on new writing systems.* London: United Bible Societies.

Smalley, W.A. (1959). How shall I write this language? *The Bible Translator, 10(2)*, 49-69.

Smith, A.D. (2017). *The languages of Borneo. A comprehensive classification*. Ph.D diss., University of Hawaii, Manoa, Hawaii. Retrieved from http://ling.hawaii.edu/wp-content/uploads /SMITH_Alexander_Final_Dissertation .pdf

Surat Tuhan: Dahun Kayan (1990). Petaling Jaya, Selangor Darul Ehsan: Bible Society of Malaysia.

Tadmor, U. (2009). Malay-Indonesian. In B. Comrie (Ed.). *The world's major languages* (2nd ed., pp. 791-818). New York: Routledge.

APPENDIX

Differences between the Unified Berawan orthography and the Long Terawan orthography

This article and the soon to be published comparative glossary use the unified Berawan orthography for all four Berawan varieties for reasons of comparability. Therefore, the differences between the unified Berawan orthography and the Long Terawan orthography are outlined below to aid Long Terawan speakers in using the glossary.

The notation of the consonants is the same in both orthographies. However, there are differences in the notation of short versus long vowels and in the representation of vowel clusters. In the unified orthography, long vowels are written with a single vowel symbol and for short vowels, a circumflex is added on top of the vowel symbol (long & short; <a & â>, <é & ê>, <i & î>, <o & ô>, <u & û>).

In the current Long Terawan orthography, no diacritics are used for vowels except for the mid-front vowel <é> to distinguish it from <e>, the neutral vowel. Instead, short vowels are represented with a single vowel letter and long vowels with a doubling of the letter (long & short; < aa & a>, <éé & é>, <i & ii>, <o & oo>, <u & uu>). The neutral vowel [ə] does not have a long counterpart and is written the same way in both orthographies <e>. The following examples, shown in table 15, illustrate the differences and similarities between the two orthographies.

Table 15. Long Terawan words – orthographic notation of long versus short vowels

Vowel	in unified Berawan orthography		in Long Terawan orthography		English gloss
long	a	nakan	aa	nakaan	was fed
short	â	nakân	a	nakan	climb (v)
long	é	katté′	éé	kattéé′	throw away
short	ê	mattê′	é	matté′	hurl (v)
long	i	usin	ii	usiin	rain
short	î	usîn	i	usin	money
long	o	nipo′	oo	nipoo′	put together
short	ô	nipô′	o	nipo′	surround
long	u	ladung	uu	laduung	crash (v)
short	û	gaddûng	u	gaddung	green

If a vowel occurs at the end of a word, that is in a final open syllable, it is always pronounced long in Berawan. This is also true for Long Terawan. Therefore, it is written with just one vowel letter in the Long Terawan orthography, as in <tana> ‘soil’ (not <tanaa>) or in <cé> ‘snail’ (not <céé>). Only in closed syllables, the long vowel is written two times, as the examples in the table above show.

Vowel clusters [iV] and [uV] are written without an intervening <y> or <w> in the Long Terawan orthography (for example <ia, ié, io, ua, ué>, etc.) but with an intervening <y> or <w> in the unified Berawan orthography, as the first ten examples in table 16 demonstrate.

Table 16. Long Terawan words – orthographic notation of vowel clusters

In Unified Berawan orthography		In Long Terawan orthography		English gloss
vowel cluster	word	vowel cluster	word	
iya	biya	ia	bia	slow
iyê	iyê′	ié	ié′	vein
iyêw	jiyêw′	iew	jiew	skewer
iyo	diyo	io	dio	far
iyû	sekiyû′	iu	sekiu′	kettle
uwâ	muwâh	ua	muah	boil (n)
uwaw	buwaw	uaaw	buaaw	migrate
uway	duway	uaay	duaay	siblings-in-law
uwé	ngeluwé′	uéé	ngeluéé′	tease (v)
uwi	muwi	ui	mui	clean (v)
ai	mai	ai	mai	river rapids
ao	taon	ao	taon	needle
au	təlau	au	təlau	barking deer

If a vowel cluster starts with low vowel /a/, as in /a.i/, /a.o/ or /a.u/ (see the last three examples in table 16 above) there is no notational difference between the unified Berawan orthography and the Long Terawan orthography, in so far as no <y> or <w> is inserted.