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Sound-changes and loanwords in Sungai Penuh Kerinci

HEIN STEINHAUER

Abstract

In this paper I shall (re)analyse the historical development of the Sungai Penuh variety of Kerinci in terms of sound-changes, with special attention to forms which deviate from the more common patterns. Data for this study have been taken from the stencilled version of Amir Hakim Usman's Kerinci-Indonesian dictionary (1976) with handwritten annotations by the author, the late David John Prentice, and myself, the result of elicitation sessions with the author in 1977 in Leiden. Some additional data derived from Usman 1988 and from an interview with the author in 1999.

KEYWORDS

Kerinci, Sungai Penuh, Kerinci varieties, (chronology of) sound-changes, loanwords.

Introduction

The Kerinci "language" consists of a large group of dialects which obviously are of Malay origin. They markedly differ from other Malay offshoots by their multiple reflexes of Proto-Malay roots, which are the outcome of phonologically and syntactically conditioned changes of root-final *-V(C) sequences. Differences between Kerinci dialects are considerable. Characteristic of Kerinci dialects is the total lack of cognates of the Standard Malay/Indonesian verbal suffixes *-kan* and *-i*.

As the name betrays, the Kerinci core area (Korinchi, Korintji, Koerintji in older sources, Kincay locally) lies around lake Kerinci at the foot of Mount Kerinci in the Indonesian provinces of Jambi. Varieties of Kerinci are also found in some migrant villages outside the Kerinci valley, in North Sumatra,

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and even in Selangor, Malaysia. The observations below are based on the main dialect of Sungai Penuh, the capital of the Indonesian *kabupaten*. Until recently this was the best described variety of Kerinci (Usman 1988; Prentice and Usman 1978; Steinhauer and Usman 1978; Steinhauer 2002). Descriptions of other dialects have appeared since Mckinnon (2011) on the Tanjung Pauh Mudik variety, Ernanda (2015) and (2017) on the Kerinci of Pondok Tinggi.

Until well into the twentieth century the Kerinci valley remained isolated and relatively inaccessible. Yet trade contacts with the outside world had existed for a long time: the first commercial treaty with the Dutch dates from 1660 (Watson 1984: 8). But these contacts took place outside the Kerinci valley, mainly in the westcoast provinces. For a long time, therefore, Kerinci remained for the Dutch (and the English for that matter) a secret valley which the natives from time to time left "in kleine groepen en steeds gewapend ... met koffie, tabak en stofgoud, om daarmede langs de westkust handel te drijven" ('in small groups and always armed ... laden with coffee, tobacco, and gold dust, with which to trade on the west coast'; Kan 1876: 28). Only in the course of the nineteenth century reports appear from Europeans who managed to penetrate into the area. In his notes on Kerinci Marsden (1811: 304-308) quoted from correspondence by Charles Campbell who in "the laudable pursuit of objects for the improvement of natural history" (p. 304) visited the valley of Kerinci in 1800. After having reached the first row of hills which separates the Kerinci valley from the West Sumatran coast, Campbell walked two days north "through as noble a forest as was ever penetrated by man" (p. 304). After a short descend from the second range of hills into the valley Campbell and his party had yet a few days to march "to the inhabited and cultivated land on the border of the great lake ..." (p. 304), Danau Kerinci, whose "banks were studded with villages" (p. 305). The people seem to have been organized in clans, several families living together in a kind of long-houses. Campbell confirms that their contacts with the outside world were mainly with the Minangkabau area: "[t]hey get some silk from *Palembang* ... [But t]he communication is more frequent with the north-west shore than with the eastern" (p. 306). In any case this held for the northwestern regions of the Kerinci valley. For the southeastern areas the picture may have been the reverse.

Referring to the unpublished report by Barnes (1818), Kathirithamby-Wells (1986) reconstructs considerable social changes in the Kerinci valley between the expedition of Campbell (1800) and Barnes' journey, caused by a puritan moslim upheaval accompanied by a hostile attitude towards the outside world, especially the heathen Europeans in Bengkulu in West Sumatra.

Untill the end of the nineteenth century Kerinci remained a white area on the map. A Dutch military expedition into the region, already planned in the 1870's after the signing of the Sumatra Treaty with the British, was finally launched in 1903. After a two months campaign the Kerinci valley had become another "pearl to the crown of the Dutch queen". But it remained a rather hidden one. Only after the construction of a road linking Kerinci to the West coast in the 1920's did the area become a target of large scale immigration,

mainly by Minangkabau. According to Usman (1988) Kerinci speakers of all dialects numbered about 200,000 in 1980, whereas the number of Minangkabau inhabitants of the district was estimated at some 40,000.

Today the estimated 50,000 speakers of Sungai Penuh Kerinci (henceforth SPK) are in contact with other varieties of Kerinci, varieties of Jambi Malay,¹ and standard Indonesian, and less directly with Arabic and English. Most salient, however is the influence of Minangkabau, which has become the market language and the language of interethnic contact at schools. Already in the Dutch time the local elite (merchants, teachers, civil servants) was Minangkabau and their language enjoyed consequently a high prestige. Most SPK speakers today are bilingual Kerinci-Minangkabau, or even trilingual, with Indonesian as their third language.

Before moving on to a discussion of the sound-changes I shall first briefly describe the major morphosyntactic differences between Standard Malay/Indonesian (henceforth SM) and SPK.

MORPHOSYNTACTIC FEATURES

SPK has the following inventory of phonemes. Vowels: /i, e, ϵ ; ə, a; u, o, σ and consonants: /b, p, m; d, t, n; j, c, σ ; g, k, σ ; z, s; r, l; w, y; h, ?/. SPK does not have suffixes. Only in very few words can traces of an original ending *-an be observed, but synchronically these can no longer be described as suffixes. With the exclusion of these exceptions it can be said that the final syllable of a word is also the final syllable of a root; and it is the final root syllable in which the sound-changes to be discussed below took place.

Nearly all non-grammatical lexemes (nouns, adjectives, verbs) occur in two shapes, coined "absolute" and "oblique", dependent on the degree of specificity of the referent of the phrase of which they are an immediate constituent. The "absolute" (henceforth ABS) form has a neutral interpretation: it can be interpreted as generic or as definite/specific, depending on the context. The "oblique" (henceforth OBL) form is more specific, that is, it implies a restricted set of possible referents of the head of phrase concerned.

The structure of SPK noun phrases is parallel to those of Indonesian. A noun may be followed by an expression for the possessor (in a broad sense), by an attributive adjective, by a demonstrative, or by an attributive prepositional expression. In all these cases the OBL forms have to be used. In the following examples umah, $dusew\eta$, and bahew are ABS forms, whereas umah and dusun are OBL.

 $^{^{1}}$ These seem to be much more similar to standard Indonesian than to any of the Kerinci varieties.

² See Prentice and Usman (1978) and Steinhauer and Usman (1978).

(1)	SPK		Indonesian
	umah	'house' ³	rumah
	umoh kamay	'our (excl.) house'	rumah kami
	umoh dus ε w η	'village house'	rumah dusun
	umoh bah $arepsilon w$	'new house'	rumah baru
	umoh itoh	'that house'	rumah itu
	umoh dusun itoh	'that village house, house of that village'	rumah dusun itu
	umoh di dusun itoh	'the house in that village' 4	rumah di dusun itu

Only phrase-finally do SPK speakers have the choice between the OBL and the ABS form:

(2) kamay məley umah. 'we (excl.) buy a house.' kami membeli rumah. kamay məley umoh. 'we (excl.) buy the house.' kami membeli rumahnya.

Adjectives followed by a demonstrative or a possessor expression within a noun phrase require the OBL form, as in the following examples (see the ABS form *bahɛw* above):

(3) umoh bahu itoh 'that new house' rumah baru itu umoh bahu kamay 'our (excl.) new house' rumah baru kami

Again there is only a choice when an adjective occurs at the end of a noun phrase. In that position the ABS form implies that the noun phrase has to be interpreted in a more generic or less specific sense, whereas the OBL form suggests specificity/definiteness:

(4)	umoh bahew.	'we (excl.) buy a new house.'	kami membeli rumah baru.		
	kamay məley umoh bahu.	'we (excl.) buy the new house.'	kami membeli rumah baru itu.		

³ In fact a non-reduplicated N in SPK should rather be analysed semantically as "unspecified number of entities with N-features". In English glosses I use the singular equivalent of N, unless the context would require a plural.

⁴ In the following sentence the absolute form *umah* precedes *di dusun itoh*. Consequently the prepositional phrase cannot be interpreted attributively. It should be interpreted as an adverbial construction instead: *Kamay məley umah di dusun itoh* 'in that village we (excl.) bought a house'.

Most of the examples of phrase-final forms in Usman (1988) occur in contexts in which the SM equivalents would require the suffix *-nya* 'his/her/it; him/her/it; by him/her/it'.

As indicated above, also verbal lexemes appear in an ABS and an OBL form. An adverb or adverbial expression following a verb evokes the ABS form of the verb if its scope is clausal, but the OBL form if its scope is restricted to the action denoted by the verb. So also here an OBL form implies a more restricted set of possible referents of the word in question. In (5) *baŋkɔy?* is the ABS form since *cəpa?* concerns the event of "our rising", whereas in the second sentence *cəpa?* only specifies the verbal action so that the OBL form *baŋki?* is required.

(5) kamay baŋkɔy? cəpa?. 'we (excl.) rose promptly.' kami bangkit cepat. (that is, without delay).

kamay baŋki? cəpa?. 'we (excl.) rose quickly.' kami bangkit cepat. (that is, with fast movements).

Transitive verbs in the active voice usually are followed by a nominal expression for the undergoer. The verb in that case requires the OBL form. In (6) the set of possible referents of the verb for "eating" is narrowed down by the following object *nasay*.

(6) kamay makan nasay. 'we eat rice.' kami makan nasi.

In the passive voice a transitive verb may be followed by a nominal expression for the third person agent. The verb will then have the OBL form:

(7) nasey itoh dimakən 'that rice was eaten by our nasi itu dimakan ibu indow? kamay. (excl.) mother.' kami.

Similar to the pattern with nouns and adjectives, a verb should have the OBL form if it occurs phrase-internally, that is, if it is followed by a specifying expression. In phrase-final position, however, ABS and OBL forms are in opposition, the latter implying a more specific activity than the former. In (8) and (9) the first sentence of each pair exemplifies the ABS form, the second one the OBL.

(8)	a.	kamay makaŋ.	'we eat.'	kami makan.
	b.	kamay makan.	'we eat it.'	kami memakannya.
	c.	nasey itoh dimakeŋ.	'that rice was eaten.'	nasi itu dimakan.
	d.	nasey itoh dimakon.	'that rice was eaten by him/her/it/them.'	nasi itu dimakannya.
(9)	a.	akaw jatewh.	'I fall.'	aku jatuh.
	b.	akaw jatuh tərawh.	'I keep falling.'	aku jatuh terus.
	c.	akaw n atoh.	'I cause to fall.'	aku menjatuhkan.

'I cause him/her/it to fall.'

aku menjatuhkannya.

d. Akaw **n**atowh.

For a more elaborate description of the contexts in which an OBL or an ABS form has to be used in SPK, I refer to Steinhauer and Usman (1978), and to Usman (1988). The most comprehensive study of such conditions – for the dialect of Pondok Tinggi (separated from Sungai Penuh by a market where Minangkabau is the common language) – see Ernanda (2017).

PHONOTACTICS

The typical morphosyntactic features of SPK are the result of a complex set of sound-changes, affecting the final *-V(C) of lexical roots. The study of these sound-changes, which gave rise to up to four different reflexes of a single root, such as <code>makan</code>, <code>makan</code>, <code>-maken</code>, <code>-makon</code> < *makan and <code>jatewh</code>, <code>jatuh</code>, <code>jatoh</code>, <code>jatowh</code> (see the examples (8) and (9) in the previous paragraph), started with a seminal paper by the late D.J. Prentice and Amir Hakim Usman (Prentice and Usman 1978). In it the authors described the correspondences between pre-Kerinci roots (very much similar to Malay) and their SPK reflexes.

Crucial for the understanding of the development of SPK is the difference between so-called G-words and K-words. Apparently the conditions for the different reflexes of pre-Kerinci*-V(C) sequences were not only syntactical (or intonational rather; see below), but also phonological: words containing a non-prenasalized voiced stop (coined G-words) were subject to one set of changes, all other words (coined K-words) to another: in general the reflexes in G-words show higher vowels in their final root syllable. A striking illustration of this so-called G-effect are the contractions of the prepositions *di 'in' and *kə 'to' with *rumah 'house' and *uma 'sawah': dumeh/dumowh6' in the house', kumah/kumoh 'to the house', dumə/dumow 'in the sawah', kumɔ/kumo 'to the sawah'.

Since bisyllabic roots act as K-words also if they contain only a prenasalised and no "free" voiced stop, I assume that the present day biphonemic sequences of a [nasal + homorganic voiced stop] once were realised monophonemically, as nasals with a non-nasal release. As such they were not functionally voiced: sequences of a nasal followed by a "voiceless" homorganic stop must always have been biphonemic. It should be noted that such a monophonemic realization of *[nasal + homorganic voiced stop] apparently only occurred as the onset of the final root syllable. The (rare) trisyllabic roots with such a sequence between the nuclei of the first and second syllable underwent the sound-changes typical of G-words. So in these words the voiced stop remained functionally a voiced stop, probably as the result of a secondary stress on the antepenultimate syllable.

In (10) possible G-words and K-words are listed in terms of their CV-structure (V = vowel, C = consonant, G = voiced stop, K = voiceless stop, NK = nasal followed by a homorganic voiceless stop, NG = nasal followed by a homorganic voiced stop, NG = nasal with non-nasal release, ' = main stress, $_$ = secondary stress, $_$ = syllable boundary; 'V may also be a stressed vowel followed by /w/ or /y/):

⁶ In this slash notation, also elsewhere in this paper, the left form is the ABS form, the right one the OBL.

(10)	G-words	K-words
	(C)V-G'V(C)	(K)V-K'V(C)
	GV-(C)'V(C)	KV-(K)'V(C)
	GVN-K'V(C)	KVN-K'V(C)
	$GV-N^{G'}V(C)$	$(K)V-N^{G'}V(C)$
	G,V-KV-K'V(C)	K,V-KV-K'V(C)
	(C), VN - GV - $K'V(C)$	
	et cetera	et cetera

As these CV-structures indicate, current SPK words are stressed on their final syllable. Stress is and probably was strongest on the final syllable of a phrase. I assume that the monosyllabic realization of the sequences *[nasal + homorganic voiced stop] before the nucleus of the final root syllable, as well as the differentiation into ABS and OBL forms, arose as a corollary to these phrasal stress patterns.

The vast majority of SPK roots which seem to derive from roots ending in *-e(C) or *-o(C) have Standard Malay/Indonesian (SM) cognates which also have mid vowels in their final syllables. In (11) four sets of cases are distinguished: (a) and (b) are K-words and G-words respectively, with a *front* mid vowel in the final syllable of their SM cognates, whereas (c) and (d) are K-words and G-words with a *back* mid vowel in the final syllable of their SM cognates:

(11)	SM	SPK (ABS/OBL)	
(a)	t	tup ε η/tupen	'mask'
	$t \varepsilon \eta g \varepsilon r$	tiŋg ɛ /tiŋge	'perch'
	cerek	cir ɛ ?/cire?	'teapot'
	cəl ɛ k	cul ɛ? /cule ?	'take out with one's fingers'
	kεcεk	kicε?/kice?	'word'

	р€пд€к	pind£?/pinde?	'short'
	kərek	kur ɛ?/ kure?	'scratch'
	reŋek	riŋ ɛ ʔ/riŋeʔ	'whine'
	сәŋк є h	cəŋkɛh/cəŋkeh	'clove'
	sal ɛ h	sal ɛ h/saleh	'devout'
(b)	d ɔŋε ŋ	duη ε η/duŋen	'fairy tale'
	geser	gise/gisey	'shift'
	ga ɛ k	gae?/gaey?	ʻold'
	$tabik/tab {m arepsilon}^7$	tabe?/tabey?	'salute'
	$lad oldsymbol{arepsilon} h$	ladeh/ladeyh	'kind of vegetable'
	s e g e h	sigeh/sigeyh	'tidy'
	gɔrɛs ⁸	guheh/guheyh	'scratch'
(c)	pokok	pukɔʔ/pukoʔ	'stem'
	pəndək	pundɔʔ/pundoʔ	'hut'
	ramp ɔ k	rampɔʔ/rampoʔ	'rob'
	tensk	tin ɔ ʔ/tinoʔ	ʻaim'
	rəkək	ukɔʔ/ukoʔ	'smoke'
	cəntəh	cunt ɔ h/cuntoh	'example'
(d)	səbək	sub ə ?/subow?	'meet'
	bal ɔ k	balə?/balow?	'beam'
	bədəh	bud ə h/budowh	'stupid'

In all these cases pre-Kerinci seems to have had mid vowels in final root syllables where SM has them today. Yet, the correspondences are not perfect. In a number of roots SPK shows the reflexes of an original mid vowel, whereas the SM cognate has a high vowel. I found the following cases:

(12)	SM	SPK expected	SPK observed	pre-Kerinci	
	bənih	**bənəvh/**bənih	bəneh/bəneyh	*baneh	'seed'

⁷ The current dictionaries of SM give two alternative forms for this lexical item. It looks as if the SPK cognate has derived from a contamination of these two forms: *tabek.

⁸ Word-medial -*r*- in SM is reflected in SPK as -*h*- or -*r*-, word-initial *r*- is either *r*- or 0 (zero). This split seems to be unconditioned and cannot be reduced to an independently reconstructible opposition velar vs. alveolar trill in pre-Kerinci (see Prentice and Usman 1978).

bunuh	**bunewh/**bunuh	bun ə h/bunowh	*bunoh	'kill'
pipih	<i>pipεh/**</i> pipeyh	pip ε h/pipeh	*pipeh	'thin and flat'
sahih	sah£h/**saheyh	sah ɛ h/saheh	*saheh	'certain, sure'
kumuh	kum ɔ h/**kumowh	kum ɔ h/kumoh	*kumoh	'filthy'

The opposite also occurs: <code>gurɔyn/gurin</code> 'bake' can only have been derived from pre-Kerinci *gurin (-ɔyn/-in being the regular reflex of *-in in a G-word), whereas SM has <code>[gɔrɛn]</code>. Likewise, <code>bucew/bucu</code> 'leaky', <code>bukew/buku</code> 'bowl', <code>gundew?/gundu?</code> 'struma' seem to come from *bucur, *bukur, and *gunduk, whereas the SM cognates are <code>bocor</code>, <code>bokor</code>, and <code>gondok</code>. Another example is the pair <code>purawh/purowh</code> 'axis', whose SM cognate is <code>[pɔrɔs]</code>. Since *high vowels diphthongize before *-s, whereas *mid vowels probably don't (see <code>[gɔrɛs]</code> in (11b)), and since <code>-awh/-owh</code> is the regular reflex of *-us in K-words, I assume that the pre-Kerinci form was *purus.

In the following instances, where current SM has mid vowels in the final root syllable, it cannot be decided whether pre-Kerinci had a mid vowel or a corresponding high one: the observed SPK forms could equally well have been arisen from pre-Kerinci forms with a high vowel in their final syllables.

(13)	SM	SPK	
	$t\varepsilon mparepsilon l$	timp ɛ /timpe	'stick'
	cinc ɔ ŋ	cincəŋ/cincon	'talkative'
	kələŋsəŋ	kaluzɔŋ/kaluzon ⁹	'wrapper'
	kiŋkɔŋ	kiŋkɔŋ/kiŋkon	'big monkey'
	kəsəŋ	kusəŋ/kuson	'empty'
	тэпсэŋ	munc ɔ ŋ/muncon	'mouth, muzzle'
	эуэŋ	uyəŋ/uyon	'unstable, dizzy'
	р є пс э ŋ	pincəŋ/pincon	'not straight, twisted'
	pətəŋ	putɔŋ/puton	'cut'
	seron	sihəŋ/sihon	'oblique, not straight'
	səkəŋ	suk ɔ ŋ/sukon	'support'
	səmbəŋ	sumbon/sumbon	'arrogant'
	sərəŋ	suh ɔ ŋ/suhon	'push'
	tələŋ	tulɔŋ/tulon	'help'
	təmbəl	tumbəŋ/tumbon	'button, knob'

təŋkəl	tuŋkɔŋ/tuŋkon	'cob'
εkər	ikɔ/ikow	'tail'
эрэг	ир э/ ироw	'kind of meat dish'

In order to anchor the loanwords in the history of the language it is necessary first to modify the sound-changes proposed in Steinhauer 2002. I assume again that in pre-Kerinci *-k was realized as a glottal stop (below written as *-?), and that the root-final trill was velar (written below as *-R). The development of pre-Kerinci *mid vowels required some reformulations and an additional sound-change. Some of the proposed sound-changes in Steinhauer 2002 had to be broken up to accommodate the new data, with consequences for the order of some of the changes. A marked difference with the earlier scenario is the unconditioned split of *-l, which in view of the behavior of loanwords must have occurred later than I assumed earlier.

The rationale behind the scenario of sound-changes is trivial:

- a change should as much as possible be phonetically plausible, and its conditioning environments should preferably consist of "natural" classes of sounds;
- 2) a possible (and plausible) conditioned split precedes the disappearance of the condition by another change;
- 3) an unconditioned split may be the result of incomplete lexical diffusion: a gradual change may just stop or be superceded by another change before it has spread over the whole lexicon;
- 4) what looks like an unconditioned split may also reflect the difference between inherited and borrowed lexicon: this is the more likely if the split separates "new" concepts from more general and traditional ones, in which case there will also be a marked difference in pattern frequency.

The differentiation of the K- and G-words in both stressed and unstressed position is largely a matter of vowel change. In the list of changes below each change is preceded by a slash code: n/n+x, in which number n+x indicates before which sound-change number n must have been operational. Inherited pre-Kerinci sounds/phonemes are preceded by an asterisk. The result of a sound-change, including a merger which leaves one of the merging phonemes intact are presented as intermediate (that is preceded by a raised +), unless they are the phonemes observed in SPK today, in which case they are unmarked. Stress and its absence are conditioning factors for most proposed vowel changes; a stressed vowel V is preceded by ': 'V.

⁻z- is the regular reflection of *-ŋs-.

1/7 Split and merger of root-final nasals.

```
*-m, *-n > +-ŋ after *-'a-
> +-n elsewhere
*-ŋ > +-n after unstressed vowels and after *-'i-
> +-ŋ elsewhere
```

This change precedes sound-change 7, according to which +-ŋ and +-n have different effects on the preceding high vowels.

2/7 Monophthongization of *-ay and *-'ay, and fronting of *-a- and *-'a- before *-s.

```
*-ay > *-\varepsilon
*-'ay > *-'\varepsilon
*-a- > *-\varepsilon
*-'a- > *-'\varepsilon
*-'a- > *-'\varepsilon
*-\varepsilon
*-\
```

This change of *-'ay has to precede the creation of new such sequences in sound-change 7.

This change creates part of the conditions for sound-change 7. According to sound-change 10, +-t subsequently merged with +-? except after unstressed +-a-. That the change of *-p into +-t was indeed as widespread as it is formulated here is corroborated by data from the neighbouring Kerinci variety of Pondok Tinggi: the cognate of SM *maniup* 'blow': *niat/niot* (Ernanda p.c.), whereas the SPK cognate is *niaw2/niow2*.

4/5 Loss of *-w in some roots

This change creates part of the conditions for sound-change 5. The loss of *-w was a slow process of lexical diffusion (continued in change 6).

5/6 Raising and rounding of *'a and *a, partial merger with *'a and *a

Root-final +-w triggers the change *a > +a, so sound-change 5 precedes the disappearance of this +-w.

6/7 Loss of +-w in some more roots

This change preceded the creation of new endings $^{\scriptsize +}$ -aw, namely sound-change 7.

7/9 Diphthongization of stressed high vowels with relative lowering in both G- and K-words

Since *-s and *-h trigger different sound-changes here, their merger (9) should postdate this "primary G-effect". The changes (9-11, 13) set the stage for the "secondary G-effect" (14-16).

8/- Assimilation of +-n to a preceding -w-.

This change is closely related to the diphthongization of 'u > aw. Nevertheless it is independent from it: it did not occur in the dialect of Pondok Tinggi, where -n is preserved in this position, whereas '-n has become 0 (zero): see SPK tanan/tanan (<*tanan) 'hand, arm', nitən/niton (<*mənhitun) 'count' vs. Pondok Tinggi tana/tanan and nitao/niton (Usman 1988: 153).

This change is assumed to antedate 12/13 since the reflex(es) of *-s and *-h no longer trigger different sound-changes.

```
10/12 Split of *-t, partial merger with *-?.

*-t > -t after *-a-

> -? elsewhere

*-? > -?
```

I assume that this change also antedates sound-change 12 since it creates a phonetically more homogeneous condition for the change of *'a to 'e.

```
11/12 Loss of *-R.

*-R > 0 (zero)
```

This loss of *-R must have postdated 7, since *-R and absence of a closing consonant trigger different vowel changes there. It must have preceded sound-change 15. Otherwise one would have to accept the temporary existence of the phonetically unlikely oppositions [-eyR \sim -eR] and [-owR \sim -oR]. As far as the inherited lexicon goes the loss of *-R could have postdated the sound-changes 12 and 14 (in which case "word-finally and before ..." would have to be replaced by "before –R ...". Because of the behaviour of loanwords, however, one must assume that it preceded these sound-changes instead (see below).

12/13 Raising and merger of *'a and +'ε, and centralization of +'a in G-words.

```
*'a > 'e in G-words (in all positions: word-finally and before *-l, -h, -?, and +-η)
> 'a in K-words
+'ε > 'e in G-words¹⁰
> 'ε in K-words
+'3 > 'θ in G-words (namely word-finally and before -h and -?)¹¹¹
```

As formulated here, this sound-change precedes 13. However, one of the conditions being "word-finally and before *-l, -h, -? and *-ŋ", it might equally well have postdated the split of *-l, and even the loss of *-l (that is sound-change 17). Nevertheless I opt for a relatively early change since sound-change 12 is concerned with stressed vowels and is therefore part of the primary G-effect, together with sound-change 7.

```
13/14 Unconditioned split of *-1.
```

> 'ɔ

in K-words

```
*-l >-ŋ in most roots, after a stressed vowel
> -n n the same roots after an unstressed vowel
> +-l after stressed and unstressed vowels in some roots
+-ŋ > -ŋ
+-n > -n
```

The location of this split vis-à-vis the other sound-changes remains problematic. It may have preceded sound-change12, but it certainly postdated 7. It must have preceded 14 since according to that sound-change $^+$ -l and $^-$ n (< $^+$ -l, $^+$ -n) trigger different changes in K-words.

¹⁰ The pair duŋɛŋ/duŋen 'fairy tale' seems to be an exception in that it has -ε- in the ABS form. I assume that it is a loanword, since SPK also has kunawŋ/kunon (see SM konon 'it is said') for 'fairy tale'. As a loanword duŋɛŋ entered the language after the primary G-effect, assimilating to the pattern of the K-word tupɛŋ/tupen 'mask'.

These are the only positions in G-words in which a stressed "' \circ is found. The change may have arisen through diphthongization: "' \circ > " \circ > ' \circ .

14/15 Rounding of unstressed +-a- in most positions.

```
+-a- > +-o- in G-words, word-finally and before *-l, -h, -?
> +-o- in G-words, before -t and -n, and in K-words word-finally and before *-l, -h, -?
> -a- elsewhere in K-words (that is before -t and -n).
```

15/- Raising of unstressed mid vowels in most positions.

```
+3 > 0 in K-words (that is, word-finally and before +-l, -?, -h, -w), and in G-words before -w

> 3 in G-words before -t and -n

> ow elsewhere in G-words (that is, word-finally and before +-l, -h, -?)

+ 2 > ey in G-words (that is, word-finally and before -h, -?)

> e in K-words (that is, word-finally and before +-l, -h, -?, -n)
```

This change could also have occurred after the loss of +-l (change 17), given the condition "word-finally and before +-l ..."

16/17 Lowering of unstressed high vowels in K-words.

```
*i > ey in K-words, word-finally and before -h, -?

> e in K-words elsewhere (that is, before +-l, -n)

> i in G-words

*u > ow in K-words word-finally and before -h, -?

> o in K-words elsewhere (that is, before -n)

> u in G-words
```

Since the presence of *-l and the absence of a final consonant trigger different changes this sound-change must have preceded the loss of *-l. The conditions imply that it postdated the split of *-l and the loss of *-R. The changes (14-16) are manifestations of the "secondary G-effect".

```
17/- Loss of +-1
+-1 > 0 (zero)
```

I assume that already after the primary G-effect (sound-change 7 and 12) ABS and OBL forms were sufficiently distinguished for the OBL form to acquire an independent meaning. Position in the phrase (medial vs. final) and accompanying intonational features (unstressed vs. stressed) had been the

major conditioning factor for the sound-changes which differentiated OBL and ABS forms. Since the OBL form, being phrase medial, was always specified by what followed in the phrase, it acquired the additional semantic feature of specificity, at least of restricted reference, as opposed to the ABS form. Once that notion of specificity or restricted reference had become an aspect of its meaning, the OBL form could from then on also be used independently, that is in phrase-final (= stressed) position (see the examples in (8b, 8d) and (9b, 9d) above).

The chronological relation between the sound-changes is schematized in Figure 1.

1) merger of *-nasals > +-ŋ, +-n	7) prim- ary	8) +-wn >-wŋ	11) *-R > 0	12) merger of	13) split of	14) round- ing	15) raising +ο, +ε	of
2) *-ay, *-'ay > +-\(\epsilon\) +-\(\epsilon\) *-as, *-'as > +-\(\epsilon\) *-\(\epsilon\) *-a, +-\(\epsilon\) *-a, +-w +-\(\epsilon\) *-a, > 0, +-w > +-\(\epsilon\) *-'a > 0	G- effect	9) *-s >-h 10) split of +-t > -t, -?		*-'a and +-'ε etc	*-l > +-l, -n, -n	of +-a-	16) low- ering of *i and *u	17) +-1 > 0

----**>** time

Figure 1. Relative chronology of sound-changes.

In appendix A all regular SPK reflexes of pre-Kerinci root-final *-V(C) sequences are given, each with their number of occurrences, and illustrated by an example of a K-word and a G-word (if existant/found). Changes elsewhere in the word, such as *-R- > -h- or zero, loss of *h- and *-h-, and *-ŋs > -z- will be taken for granted: they are independent from the changes of *-V(C). One exception might be the raising of mid vowels to their corresponding high vowels in non-final syllables, which could be related to the raising of mid vowels in unstressed final syllables. Interestingly, mid vowels in non-final syllables are also raised in recent borrowings from Dutch (either or not through Standard Malay/Indonesian):

Dutch	SM	SPK	
zegel [z'exəl]	segel [sɛgɛl]	sige/sigey	'seal'
winkel [w'ıŋkəl]	bengkel [bɛŋkɛl]	biŋke/biŋkey	'workshop'
hengsel [h'ɛŋsəl]	engsel [?ɛŋsɛl]	iz ε/ ize	'hinge'
teken [t'ekən]	teken [tɛkɛn]	tik ɛ n/tiken	ʻsign'

punten [p'yntən]	ponten [pɔntɛn]	punt ε n/punten	'points'
foto [f'oto]	foto [foto]	puto	'photo'
auto [?'oto]	oto [?oto]	uto	'car'

Which brings us to the next section of this paper.

Loanwords

The latter two SPK words in the previous section lack an ABS~OBL opposition, which indicates that these words are relatively recent additions to the lexicon. The very few entries in Amir Hakim Usman's dictionary which have a mid vowel in a non-final syllable are obviously unadapted Indonesian forms, such as biola 'violin', obral 'sales', kolera 'cholera', coklat 'brown, chocolate', and modərɛn 'modern', which also lack an ABS~OBL opposition. In general recent loanwords do not assimilate and have only one form; some examples are: alat 'instrument', bati? 'batik', bidan 'midwife', bir 'beer', bui 'prison', dadu 'dice', dasi 'tie', fitnah 'slander', gincu 'lipstick', gitar 'guitar', guru 'teacher', injil 'gospel', jas 'coat', kumpər 'stove', pahlawan 'hero', pacar 'boy/ girl friend', pilɛm 'film', plasti? 'plastic', rakɛt 'rocket', supir 'driver', sɛŋ 'zinc'. All of them conceivably new concepts.

There are also adapted loanwords which lack an opposition ABS~OBL, but which have the shape of the OBL form that may be expected on the basis of their SM cognate. In fact, bati?, bui, dasi, dadu, gincu, guru, alat and pahlawan may be interpreted as such forms. The historical reason is that the primary G-effect affected root-final stressed vowels only, whereas unstressed vowels largely remained unchanged up to the secondary G-effect. Borrowings which postdated the primary G-effect could only follow the changes which came later, such as the changes as a consequence of the secondary G-effect. A complete list of such OBL-only forms identified in my data is given in Appendix B.

There are also deviations from the regular pattern which do show an ABS-OBL opposition. If SPK speakers are aware of the sound correspondences between inherited roots and their cognates in SM, they may adapt a loanword from SM to the established SPK pattern by analogy. Some correspondences may have been more salient than others, and by consequence have triggered complete adaptation: a pair -V'C/-V''C in SPK corresponds to -VC in SM; a loanword from SM in -VC should therefore become -V'C/-V''C in SPK. Such assimilated loanwords are difficult if not impossible to detect. Other loanwords, however, may just have become subject to the sound-changes which became effective after they had entered the language: if such a foreign word ended in -V₁C₁ it was subject to all changes inherited pre-SPK words ending in +-V₁C₁ underwent in their development towards current SPK. Hereafter I shall discuss a number of such cases.

In my data there are 25 K-words and 8 G-words ending in -a/-o, and 14 G-words ending in -e/-ow, whereas their SM cognates end in -a (see the list in Appendix C). If inherited the SPK forms would have been -ɔ/-o for the

K-words and *-a/-ow* for the G-words. One must assume that they are older borrowings which have adapted to SPK patterns. At the time of borrowing, however, inherited SPK words which originally ended in *-a had changed already. The only roots in *-a* were K-words derived from words which ended in *-aR originally. The borrowed K-words in *-a/-o* and the G-words in *-e/-ow* must therefore have entered the language after *-R had disappeared (sound-change 11), but before the raising of *'a in G-words (sound-change 12). The G-words in *-a/-o* on the other hand, must postdate the secondary G-effect, namely at least sound-change 15. Similar reasonings can be followed for other deviating patterns.

There is one deviating G-word in *-a?: *ruja?/rujo?* 'spicy fruit salad' for expected **ruje?/**rujow?. The Malay word *ruja?* must have been borrowed after the secondary G-effect (namely after sound-change 15). It subsequently assimilated to the pattern of K-words originally ending in *-a?.

The two loanwords in *-ah: <code>dairah/dairoh</code> (with the alternative contraction <code>jarah/jaroh</code>) 'region', and <code>galah/galoh</code> 'stake, pole' likewise show the pattern of K-words, instead of expected **daireh/dairowh et cetera. These words too must have become part of the Kerinci lexicon after the secondary G-effect. The pair <code>sueh/suowh</code> 'one piece (of fruit)' is only seemingly an exception: it does derive from an original G-word, *səbuah.

Three K-words in -ay/-ey, paway/pawey 'parade', nyay/nyey 'concubine', and sunday/sundey 'kind of lemon' obviously derive from roots in *-ay. Had they been inherited words one would have expected **pawe/**pawe et cetera. The attested forms indicate that they are borrowings which follow the pattern of K-words in *-i, and which must have entered the language after sound-change 16.

According to the established sound-changes -h patterns with other root-final back consonants, -R, -?, -ŋ, and -l. For that reason the expected ABS reflex of *-'ih in G-words is -'eyh. And indeed I found five instances of that reflex: *agih 'give' > ageyh/agih, *ləbih 'more' > ləbeyh/ləbih, *pədih 'spicy' > pədeyh/pədih, *tagih 'claim, call in' > tageyh/tagih, *tasbih 'string of beads used in reciting laudations of Allah' > tasbeyh/tasbih. However, my data also contain five instances of a reflex -'ɔy- for *-'i- before -h, which otherwise typically occurs before anterior consonants: -*buih 'foam' > buɔyh/buih, *bərsih > barsɔyh/barsih, *dadih 'kind of sour milk' > dadɔyh/dadih, *didih 'boil' > didɔyh/didih, *jərnih 'clear (of water)' > jənɔyh/jənih. No explanation in terms of loanwords seems feasible here.

Given the prestigious position of Minangkabau in twentieth century Kerinci, influence from that language can only be expected. Some of the SPK sound-changes have parallels in Minangkabau anyway: the merger of *-s and *-h > -h, the loss of *-l and *-r, the merger of *-p, *-t, and *-? > -?, the rounding of *-a, the split of high vowels (plain before *-p, *-t , *-s, *-n, with a central offglide before *-r, *-l, *-ŋ, *-h, *-?). But there are also lexical borrowings. My data contain a number of words in *-at which is reflected in K- and G-words as $-\varepsilon$?/-e? and $-\varepsilon$?/-ey?, instead of expected -a?/-at and $-\varepsilon$?/-ot. I found eight

K-words and one G-word with those mid vowels:

```
*curat
           > cure?/cure?
                                  'stream out'
*hemat
           > imε?/ime?
                                  'thrifty'
*kulat
                                  'nibble, eat little bits'
           > kulɛʔ/kuleʔ
*silat
               sile?/sile?
                                  'Indonesian fighting sport'
               sinke?/sinke?
*siŋkat
                                  'short'
           > sue?/sue?
                                  'boastful, quarrelsome'
*suat
*təmpat
           > təmpɛ?/təmpe?
                                  'place'
*ulat
               ulε?/ule?
                                  'caterpillar'
           > bule?/buley?
*bulat
                                  'round'
```

The regular reflex of *-at in Minangkabau being -£? these forms most likely have a Minangkabau origin. The forms <code>kulat</code> and <code>suat</code> moreover do not occur in current SM dictionaries, but <code>kule?</code> and <code>sue?</code> do occur in Van der Toorn's dictionary of Minangkabau (Van der Toorn 1891). The case of *təmpat is peculiar. Usman in his SPK dictionary also gives the expected reflexes, but the word has undergone a semantic shift, being used as a euphemism for 'grave': <code>təmpa?/təmpat</code>. The need for a word with the original meaning of 'place' gave rise to the forms <code>təmpe?/təmpe?</code>, borrowed from a Minangkabau dialect which had not changed schwa into <code>-a-</code> as in more standard varieties of Minangkabau. The dialects which have pertained *schwa are spread along the southern and eastern borders of the Minangkabau speaking area, that is along the borders with Kerinci (see Nandra 1997: 88).

Some other possibly Minangkabau borrowings must also originate from this region. The regular reflexes of *-ap in SPK are -a?/at and -a?/-o? for K-words, and -e?/-ɔt and -e?/-ow? for G-words. In Minangkabau the regular reflex is -ɔ?. My data contain three K-words and two G-words (with preserved schwa in the first syllable) which point to such a Minangkabau ending -ɔ?< *-ap:

```
*acap
         > Min. ac<sub>2</sub>?
                              SPK ac2?/aco?
                                                'frequent'
                              SPK aro?/aro?
*harap
         > Min. haro?
                                                'hope'
*cilap
         > Min. cilo?
                          > SPK cilo?/cilo?
                                                'steal'
                        > SPK dəgə?/dəgow? 'robust'
*dəgap
         > Min. daga?
         > Min. gənə?
                         > SPK gənə?/gənow? 'complete'
*gənap
```

Passing over some hapaxes in my data which may involve notation errors, I finally mention three more recurrent deviations from the expected patterns. At the moment these can only be explained as internal developments of

individual lexical items:

```
*əmpat > ampa2/ampe2 (for expected ampa2/**ampat) 'four'

*main > ma\epsilon\eta/maayn (for expected **maayn/**maen) 'play'

*kain > ka\epsilon\eta/kaayn (for expected **kaayn/**kaen) 'cloth'

versus *lain > laayn/laen (as expected) 'different'
```

Three K-words for small domestic animals in *-in (expected reflex **-ayn/**-en) seem to be derived from forms in *-ɛ? (in Pondok Tinggi they are exceptions too, see Ernanda 2017).

```
*anjin > anj\varepsilon 2/anje 2 'dog'

*kambin > kamb\varepsilon 2/kambe 2 'goat'

*kucin > kuc\varepsilon 2/kuce 2 'cat'
```

Perspectives

Internal reconstruction without looking at marginal phonotactic patterns and loanwords can only present a preliminary picture, which in Steinhauer 2002 hinged too much on supposed naturalness of environments for change. Especially for a language such as SPK, which underwent rather radical sound-changes, naturalness of these changes and their conditions seem to be less overwhelming than one would like to see.

A major enigma phonetically is the nature of the phonation type which gave rise to the different developments of *-V(C) in K- and G-words. How can a voiced stop in the antepenultimate syllable influence the pronunciation of the vowel in the final syllable, without having any effect on the vowels in between? And if that is possible as a consequence of intonational features (phrase-final stress)¹² can it be made plausible that the changes should be exactly what they are? The conditions for the sound-changes in root-final *-V(C) seem to be largely similar in all Kerinci varieties. Nevertheless the phonetic outcomes are strikingly different (see Mckinnon 2011: 7; Ernanda 2015: 359).

The Kerinci area always has been a region of linguistic turmoil and it is quite possible that further sound-changes in progress can be observed live. ¹³ Further research on (the) other varieties of Kerinci is needed to ascertain to what extent the phonotactic history of SPK as proposed in this paper runs parallel to what seems to have happened in these other varieties, or whether a revised scenario has to be worked out.

With the possible consequence that OBL forms already could be phrase-final after the primary G-effect, since the secondary G-effect concerned OBL forms only.

¹³ SPK G-words ending in - ϑ (< *-a) in Usman's data from the 1970's are now realized with final - ε (Ernanda p.c.).

ABBREVIATIONS

ABS : absolute

Min. : Minangkabau

OBL : oblique

SM : Standard Malay / Indonesian

SPK : Sungai Penuh Kerinci

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APPENDIX A

Regular SPK reflexes of pre-Kerinci root-final *-V(C) sequences. The subscript numbers refer to the sound-changes involved (see Figure 1). Each ABS/OBL type is followed by a number in parentheses indicating the number of tokens found for that type.

*-V(C)	K-words (number) ABS/OBL	G-words (number) ABS/OBL	
*-a	-ɔ/-o (104)	-ɔ/-ow (73)	
*rasa 'feel'	> ₅ rasɔ/+rasɔ	> ₁₆ rasɔ/raso	
*gila 'crazy'	> ₅ +gilə/+gilə	> ₁₂ gilə/+gilə	> ₁₅ gilə/gilow
*-aR	-a/-o (36)	-e/-ow (40)	
*pasaR 'market'	> ₁₁ <i>pasa</i> /+pasa	> ₁₄ pasa/+pasɔ	> ₁₅ pasa/paso
*gusaR 'angry'	> ₁₁ +gusa/+gusa	> _{12,14} guse/+gusə	> ₁₅ guse/gusow
*-aw	-ɔ/-o (9) -a/-o (21) -aw/-ow (7)	-ə/-ow (3) -e/-ow (5) -aw/-ow (2)	
*kemaraw 'dry'	> ₄ +kamaha/+kamaha	> ₅ kamahɔ/+kamahɔ	> ₁₅ kamahɔ/kamaho
*hijaw 'green'	> ₄ +ija/+ija	> ₅ +ijɔ/+ijɔ	> ₁₂ <i>ijə/</i> +ijɔ
	> ₁₅ ijə/ijow		
*paraw 'hoarse'	> ₅ +pahaw/+pahow	> ₆ paha/+pahɔ	> ₁₅ paha/paho
*pulaw 'island'	> ₅ pulaw/+pulow	> ₁₅ pulaw/pulow	
*-al	-aŋ/-an (27) -a/-o (5)	-eŋ/-ən (9) -e/-ow (11)	
*asal 'origin'	> ₁₃ asaŋ/asan		
*bantal 'cushion'	$>_{12}$ +bantel/+bantal	> ₁₃ banteŋ/+bantan	> ₁₄ banteŋ/bantən
*kumal 'lump'	> ₁₄ +kumal/+kum ɔ l	> ₁₅ +kumal/+kumol	> ₁₇ kuma/kumo
*kidal 'left-handed'	> _{12,13} +kidel/+kidal > ₁₇ <i>kide/kidow</i>	> ₁₄ +kidel/+kidəl	> ₁₅ +kidel/+kidowl

*-am	-aŋ/-an (33)	-eŋ/-ɔn (11)	
*garam 'salt'	> ₁ +garaŋ/+garan	> ₁₂ gaheŋ/+gahan	> ₁₄ gaheŋ/gahɔn
*asam 'sour'	> ₁ asaŋ/asan		
*-an	-aŋ/-an (43)	-eŋ/-ɔn (18)	
*bulan 'moon'	> ₁ +bulan/+bulan	> ₁₂ buleŋ/+bulan	> ₁₄ buleŋ/bulɔn
*papan 'board'	> ₁ papaŋ/papan		
*-aŋ	-aŋ/-an (113)	-eŋ/ɔn (56)	
*pisaŋ 'banana'	> ₁ pisaŋ/pisan	, ,	
*bataŋ 'stem'	$>_1$ +batan/+batan	> ₁₂ bateŋ/+batan	> ₁₄ bateŋ/batɔn
*-at	-a?/-at (77)	-e?/-ɔt (26)	
*pusat 'centre'	> ₁₀ pusa?/pusat		
*jahat 'evil'	> ₁₀ +jaha?/+jahat	> ₁₂ jahe?/+jahat	> ₁₄ jahe?/jahət
*-ap	-a?/-at (35)	-e?/-ət (11)	
*-ap	-a2/-at (35) -a2/-o2 (8)	-e2/-ot (11) -e2/-ow? (10)	
*-ap *asap 'smoke'			
	-a?/-o? (8)	-e?/-ow? (10)	> ₁₂ bale?/+balat
*asap 'smoke'	-a?/-o? (8) > ₃ +asat/asat	-e?/-ow? (10) > ₁₀ asa?/asat	> ₁₂ bale?/+balat
*asap 'smoke'	-a?/-o? (8) > ₃ +asat/asat > ₃ +balat/+balat	-e?/-ow? (10) > ₁₀ asa?/asat	> ₁₂ bale?/+balat > ₁₅ gəle?/gəlow?
*asap 'smoke' *balap 'race'	-a?/-o? (8) > ₃ +asat/asat > ₃ +balat/+balat > ₁₄ bale?/balət	-e2/-ow? (10) > ₁₀ asa2/asat > ₁₀ +bala?/+balat	
*asap 'smoke' *balap 'race' *gəlap 'dark'	-a2/-o? (8) > ₃ +asat/asat > ₃ +balat/+balat > ₁₄ bale2/bal2t > ₃ +gəla?/+gəla?	-e2/-ow? (10) > ₁₀ asa?/asat > ₁₀ +bala?/+balat > _{12,14} gəle?/+gələ?	> ₁₅ gəle?/gəlow?
*asap 'smoke' *balap 'race' *gəlap 'dark' *ləŋkap 'complete'	-a2/-o? (8) > ₃ +asat/asat > ₃ +balat/+balat > ₁₄ bale?/balət > ₃ +gəla?/+gəla? > ₃ ləŋka?/+ləŋka?	-e?/-ow? (10) > ₁₀ asa?/asat > ₁₀ +bala?/+balat > _{12,14} gəle?/+gələ? > ₁₄ ləŋka?/+ləŋkə?	> ₁₅ gəle?/gəlow?
*asap 'smoke' *balap 'race' *gəlap 'dark' *ləŋkap 'complete' *-a?	-a2/-o? (8) >3 +asat/asat >3 +balat/+balat >14 bale2/balət >3+gəla?/+gəla? >3 ləŋka?/+ləŋka? -a2/-o? (83)	-e2/-ow? (10) > ₁₀ asa?/asat > ₁₀ +bala?/+balat > _{12,14} gəle?/+gələ? > ₁₄ ləŋka?/+ləŋkə? -e2/-ow? (39)	> ₁₅ gəle?/gəlow?
*asap 'smoke' *balap 'race' *gəlap 'dark' *ləŋkap 'complete' *-a? *awa? 'body'	-a?/-o? (8) >3 +asat/asat >3 +balat/+balat >14 bale?/balət >3+gəla?/+gəla? >3 ləŋka?/+ləŋka? -a?/-o? (83) >14 awa?/+awə?	-e2/-ow? (10) > ₁₀ asa?/asat > ₁₀ +bala?/+balat > _{12,14} gəle?/+gələ? > ₁₄ ləŋka?/+ləŋkə? -e2/-ow? (39) > ₁₅ awa?/awo?	> ₁₅ gəle?/gəlow?
*asap 'smoke' *balap 'race' *gəlap 'dark' *ləŋkap 'complete' *-a? *awa? 'body' *bada? 'rhino'	-a?/-o? (8) >3 +asat/asat >3 +balat/+balat >14 bale?/balət >3+gəla?/+gəla? >3 ləŋka?/+ləŋka? -a?/-o? (83) >14 awa?/+awə? >12,14 bade?/+badə?	-e2/-ow? (10) > ₁₀ asa?/asat > ₁₀ +bala?/+balat > _{12,14} gəle?/+gələ? > ₁₄ ləŋka?/+ləŋkə? -e2/-ow? (39) > ₁₅ awa?/awo? > ₁₅ bade?/badow?	> ₁₅ gəle?/gəlow?

*-as	-εh/-eh (52)	-eh/-eyh (14)	
*kəras 'strong'	> ₂ +kəhɛs/+kəhɛs	> ₉ kəheh/+kəheh	> ₁₅ kəhɛh/kəheh
*bəras 'uncooked rice'	> ₂ +bəhɛs/+bəhɛs	> ₉ +bəhɛh/+bəhɛh	> _{12,15} bəheh/bəheyh
*-ay	-ε/-e (51)	-e/-ey (16)	
*suŋay 'river'	$>_2 sun \varepsilon / + sun \varepsilon$	> ₁₅ suŋ ɛ /suŋe	
*gulay 'meat sauce'	> ₂ +gule/+gule	> _{12, 15} gule/guley	
*-i	-ay/-ey (54)	-ɔy/-i (59)	
*pipi 'cheek'	> ₇ pipay/+pipi	> ₁₆ pipay/pipey	
*babi 'pig'	> ₇ babəy/babi		
*-ih	-εh/-eyh (12)	-eyh/-ih (5)	
*pilih 'choose'	> ₇ pilɛh/+pilih	> ₁₆ pilɛh/pileyh	
*jərnih 'clear'	> ₇ jəneyh/jənih	10.	
*-is	-ayh/-eyh (18)	-əyh/-ih (8)	
	-ayh/-eyh (18) > ₂ +taŋays/+taŋis	- ɔyh/-ih (8) > , <i>taŋayh/</i> +taŋih	> ₁₄ taŋayh/taŋeyh
*-is *taŋis 'weep' *gadis 'girl'	-ayh/-eyh (18) > ₇ +taŋays/+taŋis > ₇ +gadays/+gadis	- ɔyh/-ih (8) > ₉ taŋayh/+taŋih > ₉ gadɔyh/gadih	> ₁₆ taŋayh/taŋeyh
*taŋis 'weep' *gadis 'girl'	> ₇ +taŋays/+taŋis > ₇ +gad ɔ ys/+gadis	> ₉ taŋayh/+taŋih > ₉ gadɔyh/gadih	> ₁₆ taŋayh/taŋeyh
*taŋis 'weep' *gadis 'girl' *-i?	> ₇ +taŋays/+taŋis > ₇ +gad ɔ ys/+gadis -ε 2 /-ey 2 (30)	> ₉ taŋayh/+taŋih > ₉ gadɔyh/gadih -eyʔ/-iʔ (13)	> ₁₆ taŋayh/taŋeyh
*taŋis 'weep' *gadis 'girl' *-i? *titi? 'dot'	> ₇ +taŋays/+taŋis > ₇ +gadays/+gadis - ϵ 2/- ϵ 9? (30) > ₇ tit ϵ 2/+titi?	> ₉ taŋayh/+taŋih > ₉ gadɔyh/gadih	> ₁₆ taŋayh/taŋeyh
*taŋis 'weep' *gadis 'girl' *-i?	> ₇ +taŋays/+taŋis > ₇ +gad ɔ ys/+gadis -ε 2 /-ey 2 (30)	> ₉ taŋayh/+taŋih > ₉ gadɔyh/gadih -eyʔ/-iʔ (13)	> ₁₆ taŋayh/taŋeyh
*taŋis 'weep' *gadis 'girl' *-i? *titi? 'dot'	> ₇ +taŋays/+taŋis > ₇ +gadays/+gadis - ϵ 2/- ϵ 9? (30) > ₇ tit ϵ 2/+titi?	> ₉ taŋayh/+taŋih > ₉ gadɔyh/gadih -eyʔ/-iʔ (13)	> ₁₆ taŋayh/taŋeyh
*taŋis 'weep' *gadis 'girl' *-i? *titi? 'dot' *cabi? 'torn'	> ₇ +taŋays/+taŋis > ₇ +gadays/+gadis - ϵ 2/- ϵ 9 (30) > ₇ tit ϵ 2/+titi? > ₇ cabey2/cabi?	> ₉ taŋayh/+taŋih > ₉ gadɔyh/gadih -eyʔ/-iʔ (13) > ₁₆ titɛʔ/titeyʔ	> ₁₆ taŋayh/taŋeyh > ₁₀ lancay?/+lanci?
*taŋis 'weep' *gadis 'girl' *-i? *titi? 'dot' *cabi? 'torn'	> ₇ +taŋays/+taŋis > ₇ +gadəys/+gadis -ɛ²/-ey² (30) > ₇ titɛ²/+titi? > ₇ cabey²/cabi? -ay²/-ey² (14)	>, taŋayh/+taŋih >, gadɔyh/gadih -eyʔ/-iʔ (13) >, titɛʔ/titeyʔ -ɔyʔ/-iʔ (2)	
*taŋis 'weep' *gadis 'girl' *-i? *titi? 'dot' *cabi? 'torn'	> ₇ +taŋays/+taŋis > ₇ +gadays/+gadis -ɛ?/-ey? (30) > ₇ titɛ?/+titi? > ₇ cabey?/cabi? -ay?/-ey? (14) > ₃ +lancit/+lancit	>, taŋayh/+taŋih >, gadɔyh/gadih -eyʔ/-iʔ (13) >, titɛʔ/titeyʔ -ɔyʔ/-iʔ (2)	
<pre>*taŋis 'weep' *gadis 'girl' *-i? *titi? 'dot' *cabi? 'torn' *-ip *lancip 'pointed'</pre>	> ₇ +taŋays/+taŋis > ₇ +gadəys/+gadis -ɛ²/-ey? (30) > ₇ titɛ²/+titi? > ₇ cabey²/cabi? -ay²/-ey? (14) > ₃ +lancit/+lancit > ₁₆ lancay²/lancey?	> ₉ taŋayh/+taŋih > ₉ gadɔyh/gadih -eyʔ/-iʔ (13) > ₁₆ titɛʔ/titeyʔ -ɔyʔ/-iʔ (2) > ₇ +lancayt/+lancit	> ₁₀ lancay?/+lanci?
*taŋis 'weep' *gadis 'girl' *-i? *titi? 'dot' *cabi? 'torn' *-ip *lancip 'pointed' *wajip 'obliged'	> ₇ +taŋays/+taŋis > ₇ +gadəys/+gadis - ɛ 2/- e y? (30) > ₇ titɛ?/+titi? > ₇ cabey?/cabi? - a y?/- e y? (14) > ₃ +lancit/+lancit > ₁₆ lancay?/lancey? > ₃ +wajit/+wajit	> ₉ taŋayh/+taŋih > ₉ gadɔyh/gadih -eyʔ/-iʔ (13) > ₁₆ titɛʔ/titeyʔ -ɔyʔ/-iʔ (2) > ₇ +lancayt/+lancit > ₇ +wajɔyt/+wajit	> ₁₀ lancay?/+lanci?

*-im	-ayn/-en (6)		
*kiRim 'send'	> ₁ +kihin/+kihin	> ₇ kihayn/+kihin	> ₁₆ kihayn/kihen
*-in	-ayn/-en (16)	-əyn/-in (6)	
*asin 'salt(y)'	> ₁ +asin/+asin	> ₉ asayn/+asin	> ₁₆ asayn/asen
*rajin 'diligent'	> ₁ +rajin/rajin	> ₇ rajɔyn/rajin	
*-iŋ	-ayn/-en (36)	-əyn/-in (15)	
*asiŋ 'strange'	> ₁ +asin/+asin	> ₉ asayn/+asin	> ₁₆ asayn/asen
*dindin 'wall'	> ₁ +dindin/dindin	>, dindəyn/dindin	
*-i1	-ε/-e (5)	-ey/-i (4)	
	-εη/-en (4)		
*kancil 'mouse- deer'	> ₇ +kancɛl/+kancil	$>_{13} kance\eta/+kancin$	> ₁₆ kancɛŋ/kancen
*katil 'small bench'	> ₇ +katɛl/+katil	> ₁₆ +katɛl/+katel	> ₁₇ katɛ/kate
*sabil 'the Holy Way'	> ₇ +sabeyl/+sabil	> ₁₇ sabey/sabi	
vvay			
*-iR	-ε/-ey (24)	-ey/-i (10)	
•	-ε/-ey (24) > ₇ +pikεR/+pikiR	-ey/-i (10) > ₁₁ <i>pikε</i> /+piki	> ₁₆ pikɛ/pikey
*-iR	•		> ₁₆ pikɛ/pikey
*-iR *pikiR 'think'	> ₇ +pikeR/+pikiR	> ₁₁ pikε/+piki	> ₁₆ pikɛ/pikey
*-iR *pikiR 'think' *bibiR 'lip'	> ₇ +pikεR/+pikiR > ₇ +bibeyR/+bibiR	> ₁₁ pikɛ/+piki > ₁₁ bibey/bibi	> ₁₆ pikɛ/pikey
*-iR *pikiR 'think' *bibiR 'lip' *-u	> ₇ +pikεR/+pikiR > ₇ +bibeyR/+bibiR -aw/-ow (61)	> ₁₁ <i>pikε</i> /+piki > ₁₁ <i>bibey/bibi</i> -εw/-u (38)	> ₁₆ pikε/pikey
*-iR *pikiR 'think' *bibiR 'lip' *-u *kuku 'nail'	> ₇ +pikeR/+pikiR > ₇ +bibeyR/+bibiR -aw/-ow (61) > ₇ kukaw/+kuku	> ₁₁ <i>pikε</i> /+piki > ₁₁ <i>bibey/bibi</i> -εw/-u (38)	> ₁₆ pikɛ/pikey
*-iR *pikiR 'think' *bibiR 'lip' *-u *kuku 'nail' *bulu 'feather'	> ₇ +pikεR/+pikiR > ₇ +bibeyR/+bibiR -aw/-ow (61) > ₇ kukaw/+kuku > ₇ bulεw/bulu	> ₁₁ pikε/+piki > ₁₁ bibey/bibi -εw/-u (38) > ₁₆ kukaw/kukow	> ₁₆ pikɛ/pikey
*-iR *pikiR 'think' *bibiR 'lip' *-u *kuku 'nail' *bulu 'feather' *-uh	> ₇ +pikεR/+pikiR > ₇ +bibeyR/+bibiR -aw/-ow (61) > ₇ kukaw/+kuku > ₇ bulεw/bulu -oh/-owh (33)	> ₁₁ <i>pikɛ</i> /+piki > ₁₁ <i>bibey/bibi</i> -ɛw/-u (38) > ₁₆ <i>kukaw/kukow</i> -ewh/-uh (14)	> ₁₆ pikɛ/pikey
*-iR *pikiR 'think' *bibiR 'lip' *-u *kuku 'nail' *bulu 'feather' *-uh *kukuh 'steady'	> ₇ +pikεR/+pikiR > ₇ +bibeyR/+bibiR -aw/-ow (61) > ₇ kukaw/+kuku > ₇ bulεw/bulu -bh/-owh (33) > ₇ kukɔh/+kukuh	> ₁₁ <i>pikɛ</i> /+piki > ₁₁ <i>bibey/bibi</i> -ɛw/-u (38) > ₁₆ <i>kukaw/kukow</i> -ewh/-uh (14)	> ₁₆ pikɛ/pikey
*-iR *pikiR 'think' *bibiR 'lip' *-u *kuku 'nail' *bulu 'feather' *-uh *kukuh 'steady' *basuh `wash'	> ₇ +pikεR/+pikiR > ₇ +bibeyR/+bibiR -aw/-ow (61) > ₇ kukaw/+kuku > ₇ bulεw/bulu -bh/-owh (33) > ₇ kuk>h/+kukuh > ₇ basewh/basuh	> ₁₁ pikɛ/+piki > ₁₁ bibey/bibi -ɛw/-u (38) > ₁₆ kukaw/kukow -ewh/-uh (14) > ₁₆ kukɔh/kukowh	> ₁₆ pikε/pikey > ₁₆ alawh/alowh

*-u?	-52/-ow? (42)	-ew?/-u? (32)	
*kutu? 'curse'	> ₇ kutɔ?/+kutu?	> ₁₆ kutɔ?/kutow?	
*dudu? 'sit'	> ₇ dudew?/dudu?		
*-up	-aw?/-ow? (11)	-ew?/-u? (4)	
*cukup 'enough'	> ₃ +cukut/+cukut	> ₇ +cukawt/+cukut	> ₁₀ cukaw?/ +cuku?
	> ₁₆ cukaw?/cukow?		
*gugup 'nervous'	> ₃ +gugut/+gugut	> ₇ +gugɛwt/+gugut	> ₁₀ gug&w?/gugu?
*-ut	-aw?/-ow? (45)	-εw?/-u? (22)	
*lutut 'knee'	> ₇ +lutawt/+lutut	> ₁₀ lutaw?/+lutu?	> ₁₆ lutaw?/lutow?
*kabut 'mist'	> ₇ +kabewt/+kabut	$>_{10}$ kab ε w?/kabu?	
*-um	-awŋ/-on (12)	-εwŋ/-un (4)	
*cium 'smell'	> ₁ +ciun/+ciun	> ₇ +ciawn/+ciun	> ₈ ciawŋ/+ciun
	> ₁₆ ciawŋ/cion		
*jarum 'needle'	> ₁ +jarun/+jarun	> ₇ +jarɛwn/jarun	> ₈ jarɛwŋ/jarun
*-un	-awŋ/-on (17)	-εwŋ/-un (8)	
*tənun 'weave'	> ₇ +tənawn/+tənun	> ₈ tənawŋ/+tənun	> ₁₆ tənawŋ/tənon
*dusun 'village'	> ₇ +dusewn/dusun	$>_8$ dus ε w η /dusun	
*-uŋ	-əŋ/-on (49)	-ewŋ/-un (33)	
*patuŋ 'statue'	> ₁ +patuŋ/+patun	> ₇ patɔŋ/+patun	> ₁₆ patɔŋ/paton
*buruŋ 'bird'	> ₁ +buruŋ/+burun	>, burewŋ/burun	
*-ul	-əŋ/-on (15)	-ewŋ/-un (7)	
		-ew/-u (2)	
*tumpul 'blunt'	> ₇ +tumpəl/+tumpul	> ₁₃ +tumpɔŋ/+tumpun	> ₁₆ tumpɔŋ/tumpon
*bakul 'basket'	> ₇ +bakewl/+bakul	> ₁₃ bakewŋ/bakun	
*gundul 'bold'	> ₇ +gundewl/+gundul	> ₁₇ gundew/gundu	

*-uR	-ɔ/-ow (37)	-ew/-u (19)	
*kapuR 'chalk'	> ₇ +kapɔR/+kapuR	> ₁₁ kapɔ/+kapu	> ₁₆ kap ɔ /kapow
*kubuR 'grave'	> ₇ +kubewR/+kubuR	> ₁₁ kubew/kubu	
* 0.0	an / an (1)		
*- ɛŋ	-εŋ/-en (1)		
*təpɛŋ 'mask'	> ₁ tupεη/+tupεn	$>_{15} tup \varepsilon \eta/tupen$	
*- ɛ h	εh/-eh (2)	-eh/-eyh (3)	
*salɛh 'pious'	> ₁₅ sal ɛ h/saleh		
*sɛgɛh 'neat'	> _{12,15} sigeh/sigeyh		
*- & S		-eh/eyh (1)	
*gorɛs 'scratch'	> ₉ +guheh/+guheh	> _{12,15} guheh/guheyh	
*-e?	-ε?/-e? (6)	-e?/-ey? (2)	
		02/ 0/2 (=)	
*kore? 'scratch'	> ₁₅ kurε?/kure?		
*- ɛ l	-ε/-e (2)		
*tempel 'stick'	$>_{15}$ +timpɛl/+timpel	> ₁₇ timpɛ/timpe	
*- ɛ r	-ε/-e (1)	-e/-ey (1)	
*tɛŋgɛR 'perch'	$>_{11} ting \varepsilon / + ting \varepsilon$	> ₁₅ tiŋgɛ/tiŋge	
* geseR 'shift'	$>_{11} + gis\epsilon / + gis\epsilon$	> ₁₂ gise/+gise	> ₁₅ gise/gisey
*-ɔ?	-52/-07 (5)	-ə?/-ow? (2)	
*rampɔ? 'rob'	> ₁₅ ramp3?/rampo?		
*sɔbɔ? 'meet'	> _{12,15} subə?/subow?		
20001 Intel	12,15		
*-əh	-əh/-oh (1)	-əh/-owh (1)	
*contoh 'example'	> ₁₅ cunt3h/cuntoh		
*bədəh 'stupid'	> _{12,15} budəh/budowh		

-əŋ (=-uŋ)	-əŋ/-on (16)	
*pɔtɔŋ 'cut'	> ₁ putɔŋ/+putɔn	> ₁₅ putɔŋ/puton
*- ɔl (= *- ul) *tɔmbɔl 'button'	-əŋ/-on (2) > ₁₄ tumbəŋ/+tumbən	> ₁₅ tumbəŋ/tubon
*-ər (= *-ur)	-ɔ/-ow (2)	
*ɛkər 'tail'	> ₁₁ ikɔ/+ikɔ	> ₁₅ ik3/ikow

Appendix B

Borrowings with only an OBL form

Presumed shape SPK

in source language OBL only

K-words

kəngsi	> ₁₆ kuzey	'clique'
kuli	> ₁₆ kuley	'coolie'
peniti	> ₁₆ panitey	'safety pin'
polisi	> ₁₆ pulisey	'police'
rəti	> ₁₆ rutey	'bread'
syafii	> ₁₆ sapiey	'Islamic school of thought'
məsin	> ₁₆ məsen	'machine'
stɔkiŋ¹⁴	> ₁₆ tuken	'stocking'
suliŋ	> ₁₆ sulen	'flute'
andil	> _{13,16} anden	'share'
hasil	> _{13,16} asen	'result'
keripi?	> ₁₆ ripey?	'kind of chips'
syarif ¹⁵	> ₁₆ sareyh	'sharif'
lampu	> ₁₆ lampow	'lamp'

At the time of borrowing SPK had no roots ending in $-i\eta$ or $-u\eta$. The final $-\eta$ in the source language must have been borrowed as -n.

The merger of inherited root-final fricatives (sound-change 9) extended to -f in loanwords: -f in the source language is always reflected as -h in SPK.

səpatu ¹⁶	> ₁₆ sapatow	'shoe'
pancur	> _{11,16} pancow	'fountain'
tambur	> _{11,16} tambow	'drum'
caŋku?	> ₁₆ caŋkow?	'ent'
handu?	> ₁₆ andow?	'towel'
рири?	> ₁₆ <i>pupow?</i>	'dung'
m ə rcun	> ₁₆ marcon	'firecracker'
paŋguŋ ¹⁷ 'stage'	> ₁₆ paŋgon	'stage, cinema'
sup^{18}	> ₁₆ sow?	'soup'
səkrup ¹⁹	> ₁₆ sakərowh	'screw'
huruf ²⁰	> ₁₆ hurowh	'letter'
sələp (<dutch [sla<="" slof="" td=""><td>of] 'slipper')²¹</td><td></td></dutch>	of] 'slipper') ²¹	
	> ₁₆ səlow?	'sandal'
Arab	> ₁₀ arat	'Arab(ic)'
cat	> ₁₀ cat	'paint'
mɛtɛr	> _{11,15} <i>mitey</i>	'metre'
tonton	> ₁₅ tunton	'watch'
los (<dutch [lots<="" loods="" td=""><td>s]²² 'shed')</td><td></td></dutch>	s] ²² 'shed')	
	> _{9,15} lowh	'open market hall'
วฦkวร (< Dutch onkost	ten ['ɔŋkɔstən])²³	
	> _{9,16} uŋkowh	'expenses'

¹⁶ *-ə- in antepenultimate syllables is always reflected as *-a-*, in penultimate syllables sometimes. The latter phenomenon may be a matter of Minangkabau influence.

¹⁷ See footnote 13.

¹⁸ At the time of borrowing the only root-final stops were -*t* (after sound-change 10 restricted to the position after -*a*-) and -?. I assume that the word entered the language after 10, so that -*p* of the source language was borrowed as -?.

The immediate source was probably closer to the Dutch original (*schroef* [sxruf]): *s;əkəruf. Otherwise the final SPK consonant would have been ? as in *sow*? < *sup*.

At the time of borrowing -h was the only root-final fricative; see footnote 19.

As to -p in the source language becoming -?, see footnote 18.

Only \dot{G} -words ended in +-oh when most of the words in this list must have entered the language, and [lots] > +los > $_{9}$ +loh could only follow the pattern of G-words: > $_{15}$ lowh.

Given the reflex in *-owh* an intermediate form must have existed with a closed [o] in the final syllable, instead of [a].

hal	> ₁₃ han	'affair'
campa?	> _{14,15} campo?	'measles'
lap	> ₁₀ lat	'rug'
suŋlap	> ₁₀ suŋlat	'do magic tricks'
G-words		
bugis	>, bugih	'Buginese'
hadis	> ₉ hadih	'life of Mohamad'
darat	> ₁₃ dahət	'interior, mainland'

Appendix C Borrowings with a deviating ABS-OBL opposition.

K-words in -a/-o

istana	>	istana/istano	'palace'
irama	>	irama/iramo	'rhythm'
istimewa	>	istimiwa/istimiwo	'special'
kəreta	>	karita/karito	'carriage'
kina	>	kina/kino	'quinine'
kəta	>	kuta/kuto	'town'
makna	>	ma?na/ma?no	'meaning'
mərica	>	marica/marico	'pepper'
plaza 'plaza'	>	palasa/palaso	'open balcony'
рәтсита	>	parcuma/parcumo	'in vain'
pəta	>	pəta/pəto	'map'
piama	>	piama/piamo	'pyama'
pita	>	pita/pito	'ribbon'
raŋka	>	raŋka/ raŋko	'framework'
rawa	>	rawa/rawo	'swamp'
ria 'cheerful'	>	ria/rio	'arrogant'
rela	>	rila/rilo	'prepared'

səkəlah > sakula/sakulo 'school'

sandiwara > sandiwara/sandiwaro 'theatre'

sita > sita/sito 'confiscate'

təntara > tantəra/tantəro 'soldier'

ulama > ulama/ulamo 'muslim theologist'

G-words in -e/-ow

bəndera > bandire/bandirow 'flag'

bisa > bise/bisow 'be able'

doa > du?e/du?ow 'prayer'

duga > duge/dugow 'predict'

gaya > gaye/gayow 'behavior'

gəmpa > gəmpe/gəmpow 'earthquake'

jəndela > jandile/jandilow 'window'

jawa > jawe/jawow 'Java'

kəbaya > kabaye/kabayow 'kind of woman's dress'

kamboja > kambuje/kambujow 'frangopani'

kəmeja > kamije/kamijow 'shirt'

ləga > ləge/ləgow 'relieved'

meja > mije/mijow 'table'

roda > rude/rudow 'wheel'

G-words in -a/-o

dansa > daza/dazo 'dance'

darma > darma/darmo 'gift'

dewa > dewa/dewo 'god'(NB. no raising of the

mid vowel)

gəreja > garija/garijo 'church'

gərhana > garhana/garhano 'eclips'

kəluarga > kaluarga/kaluargo 'family'

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puja > puja/pujo 'praise' səlada > salada/salado 'salad'