P-ISSN 2355-2794
E-ISSN 2461-0275

Vowel Adaptations of Indonesian Loanwords into Dialects of Acehnese: Reinforcing Acehnese Identity

Zulfadli Abdul Aziz[*1]
Robert Amery[2]
Faisal Mustafa[1]

[1]Department of English Education, Faculty of Teacher Training and Education, Universitas Syiah Kuala, Banda Aceh 23111, INDONESIA
[2]Department of Linguistics, School of Humanities, The University of Adelaide, Adelaide SA 5005, AUSTRALIA

Abstract

Acehnese, like other regional languages throughout Indonesia, is in constant and intense contact with Bahasa Indonesia, a lingua franca of Indonesia. Not surprisingly, many Indonesian loanwords are flooding into Acehnese. There are some interesting sound changes affecting both consonants and vowels, phonotactics, and stress. This paper explores the vowel changes occurring in Indonesian loanwords when used within dialects of Acehnese. A list of 285 well-established loanwords was compiled and recorded from native speakers of each of the four main Acehnese dialects (North Aceh, Pidie, Greater Aceh, and West Aceh). The informants were lecturers or postgraduate students and fluent bilingual speakers of both a selected Acehnese dialect and Indonesian. Phonemic transcriptions were compared with their Indonesian correspondences. The results of this study show that the behaviour of the vowels in this list of Indonesian loanwords is not a simple case of phonological assimilation, as usually occurs in loanword phonology, but rather often exhibits phonological dissimilation and must be an expression of Acehnese identity. In particular, the high back unrounded vowel /ɯ/ is a salient Acehnese vowel not found in Indonesian. A wide range of Indonesian vowels is frequently replaced by this vowel, resulting in the loanwords sounding

[*] Corresponding author, email: zulfadli.aziz@usk.ac.id

Citation in APA style: Aziz, Z A., Amery, R., & Mustafa, F. (2023). Vowel adaptations of Indonesian loanwords into dialects of Acehnese: Reinforcing Acehnese identity. *Studies in English Language and Education, 10*(1), 447-469.

Received March 30, 2022; October 9, 2022; Accepted November 19, 2022; Published Online January 31, 2023

https://doi.org/10.24815/siele.v10i1.25488

distinctively Acehnese. The conditions when such changes occur are discussed in the paper.

Keywords: Acehnese, language contact, loanword, phonology.

1. INTRODUCTION

Malay language, rather than Bahasa Indonesia, may have been the primary source of some or perhaps many of the Acehnese loanwords under investigation in this study. Long-term contact with Malay dates back to as early as 1340 and can be traced back to the Sriwijaya Kingdom, as evidenced by the stone inscription found in Pasai, North Aceh, which was written in Malay in 1380 (Teeuw, 1959). This gravestone was similar to the inscriptions appearing elsewhere within the Sriwijaya Kingdom (Sneddon, 2003). Malay has functioned as a court and administrative language in the region based on evidence that it was the language of the Sumatran empire of Sriwijaya (9^{th} to 14^{th} centuries) (Adelaar, 2009; Adisaputera et al., 2015; Maryanto, 2009). The language has also been used in medieval Malay states, including Malacca. The traditions of using Malay as the court language was diffused far and wide, and much smaller successor states such as Johor-Riau (Malaysia), Kelantan (Malaysia), and Aceh (Indonesia) were inspired to adopt these traditions (Adisaputera et al., 2015).

Acehnese is an Austronesian language spoken in the northwestern part of Indonesia (Mustafa, 2022) by around 3.5 million speakers (Lewis, 2009). According to Yusuf (2013), the language has four main dialects, i.e. Greater Aceh dialect, Pidie dialect, North Aceh dialect, and West Aceh dialect. The Greater Aceh dialect is spoken in the Aceh Besar Regency, located in the centre part of Aceh. The Pidie dialect is used in Pidie and Pidie Jaya Regencies, which is about 100 km from Aceh Besar Regency. North Aceh dialect is spoken in three regencies in Aceh, i.e. East Aceh, North Aceh, and Bireuen. Finally, the West Aceh dialect is spoken in four western regencies, including Aceh Jaya, West Aceh, Nagan Raya, and South Aceh. In more recent historical times, Acehnese has also been in intense contact with another Malay-based language, Jamee, brought to Aceh by Minangkabau refugees fleeing from the Padri civil wars in West Sumatra in the early nineteenth century (Balai Bahasa Banda Aceh, 2012). Sharing the Islamic religion, they were welcomed as guests to Aceh, hence the name *jamèe*, which means ‘guest’ in Acehnese. There are now approximately 60.000 speakers of Jamee permanently residing in some parts of Aceh, especially in West Aceh. Furthermore, Arabic is a foreign language that greatly influences and has direct contact with the Acehnese language and Indonesian/Malay (Zulfadli, 2014).

The contact with Malay-based languages intensified after the Indonesian independence in 1945, due to the adoption of Bahasa Indonesia, which is originally Malay, as the national language. The contact with Bahasa Indonesia is enhanced by the active role of the central government in promoting it as the official language to be used in schools, in courtrooms, and at official events by speakers in the Aceh Province (Yusuf, 2013). Anderbeck (2010, p. 98) has expressed her concern about the stability of vernacular languages in Indonesia, such as the Jambi Malay language, by arguing that “many minority languages in Indonesia are at risk with respect to the powerfully dominant standard Indonesian”.

Bahasa Indonesia, as Indonesia's national and official language, has inevitably come into contact with local languages throughout the country, and Aceh is no exception. Bahasa Indonesia became the official language in Aceh when the province became a part of Indonesia in 1950 (Reid, 2005; Yusuf, 2013). The central government has designated Bahasa Indonesia as the language of allegiance to the republic. The Indonesian armed forces rigorously enforced its use during its occupation of many regions of Aceh, especially urban areas, during the war waged by *Gerakan Aceh Merdeka* (GAM) [Free Aceh Movement] in its bid for independence prior to 2004. The central government has urged Indonesians to use good Bahasa Indonesia in order to promote national unity (see Arka, 2013). Further, it has mandated Bahasa Indonesia as the official language for use in schools, government offices, and other formal places or situations throughout Indonesia (Maryanto, 2009).

As a result of the mass introduction of Bahasa Indonesia in the Acehnese-speaking community and the central role it played, people began to feel more comfortable using it than the local language (Al-Auwal, 2017; Amery & Aziz, 2020; Aziz & Amery, 2016). It is used as the instructional language in all academic institutions in Aceh. The teachers in schools were encouraged to use Bahasa Indonesia and not Acehnese in the classrooms. It is also used in official speeches. With the weight of the state behind it, Acehnese people of all dialect backgrounds have inevitably been in intense contact with Bahasa Indonesia. Most are extremely proficient speakers even though they still speak their own variety of Acehnese daily. However, there are worrying signs of an imminent language shift to Bahasa Indonesia, which is being adopted as the primary language by the younger generations, especially in urban areas (Aziz et al., 2022). Most young parents now habitually speak Bahasa Indonesia to their children (Al-Auwal, 2022).

This intense contact with a language of considerable authority and prestige has triggered the Acehnese speakers to borrow many words from the national language, and some of these have displaced the original words in Acehnese (Zulfadli, 2014). Yet, the Acehnese people pronounce the very same words one way when speaking Indonesian and in a different way when speaking Acehnese. Some examples of these words, as appeared in Yusuf et al. (2022a), are *maksud* /maksud/ 'to mean', *tinggal* /tiŋgal/ 'to live', and *pulpen* /pɔlpɛ̃n/ 'pen', which are pronounced as *makeusud* /ma.kɯ.sud/, *tinggai* /tiŋgai/ and *polpèn* /pɔlpɛ̃n/ when speaking Acehnese.

That the lexicon of the Acehnese language has been influenced heavily by these three languages (Indonesian/Malay, Jamee and Arabic) (Zulfadli, 2014) is therefore not surprising. This influence is spread across all four dialects of Acehnese, i.e. North Aceh (the defacto standard), West Aceh, Greater Aceh, and Pidie (Asyik, 1987). These four dialects have been in contact with Indonesian and Arabic with more or less the same intensity except in the large commercial centres, the seat of government and administrative centres, etc. (i.e., Banda Aceh or other district capitals). However, the Acehnese spoken along the western coast of the province, especially in South Aceh and some small parts of West Aceh, has had much stronger influence from the Malay-like Jamee language as they are in frequent contact with these speakers. Although this phenomenon has been in place for a long time, comprehensive and thorough studies have not addressed this issue, including vowel correspondences between Acehnese and Bahasa Indonesia. Previous studies focused more on Arabic loanwords in Acehnese (Al-Harbi, 1991; Firdaus, 2011). Therefore, this research investigates the integration of long-established Indonesian loanwords in the four dialects of Acehnese (Greater

Aceh, Pidie, North Aceh, and West Aceh dialects), focusing on vowels to answer the following research question:

- How are the vowels of words of Malay/Indonesian origins changed when they are used as loanwords in the various dialects of Acehnese?

2. LITERATURE REVIEW

2.1 Language Contact and Borrowing

Language contact may occur through immediate contact between people and through indirect contact via signage, labels, books, movies or other mass media. An appropriate social circumstance and history of social relations may also lead to language contact (Mithun, 2014). The contact may occur at language borders or as a result of migration, trade, colonisation, military invasion, forced relocation, urbanisation, etc. When speakers of different languages interact very closely, it is typical for the languages to influence each other differently. These phenomena are responsible for much of the world's vast linguistic diversity.

The most obvious outcomes of language contact are borrowing and interference (Weinreich, 1979), borrowing and shift-induced interference (Thomason, 2001), matter replication and pattern replication (Matras, 2002; Matras & Sakel, 2007), and language maintenance, language shift, language creation (Winford, 2003). In other words, the interaction between two or more languages or varieties can result in a variety of phenomena, such as the creation of new languages (e.g. pidgins, creoles, koines and mixed languages), strata influence, language shift, semantic change, syntactic change, borrowing of vocabulary and so on. In fact, no aspect of language is immune from the effects of language contact. When languages come into contact, they tend to take words from one another and make them part of their own vocabulary. The borrowing process is claimed to be an unavoidable contact-induced change phenomenon (Alvanoudi, 2017).

Even though the term borrowing is based on a strange metaphor (after all, the donor language does not expect to receive its words back), and the term transfer or transference (e.g. Clyne, 2004) would be preferable, in this study, the term borrowing is maintained. Borrowing refers to 'incorporating foreign elements into the speakers' native language (Thomason & Kaufman, 1988). Epps (2014, p. 580) points out that "the source of the loan is likely to represent the source of the concept". When words are borrowed, some adaptation is needed in order to meet the linguistic characteristics of the recipient language. Some non-native phonemes from the donor language, for example, usually need to be adjusted to the sound system of the recipient language, or the phonological patterns are modified according to the phonological rules of the recipient language. Sometimes, the modification and adaptation of the phonological system of loanwords may be aberrant and seem not to fit either the donor or recipient language. To further complicate matters, according to Epps (2014, p. 586), "a loan may be passed along several languages via a borrowing chain, and therefore cannot be taken as evidence of direct contact among all the groups concerned".

Languages normally borrow words out of 'need'. When a new concept or item is acquired by contact with another group, the need for a word to go along with it arises, and often the word is borrowed along with the concept, which is why many

languages have similar words for 'coffee' and 'tobacco', for example (Campbell, 2013). New words and concepts are often associated with the introduction of new technologies (e.g. 'printer', 'sonar', 'computer'), foods (e.g. 'pizza', 'sushi'), religions (e.g. 'zen', 'imam'), cultural practices (e.g. 'bonsai') and so on. The borrowing in question is adopted because the recipient language needs the words due to the limitations of existing vocabulary within these lexical fields. The loanwords are therefore used to fill gaps in the recipient language.

At times, languages also borrow words from other languages to be used alongside existing words that have exactly the same or similar meanings. Why should speakers use a word from another language if they have a perfectly good word for the same concept in their own language? This phenomenon is typically driven by 'prestige'. The donor language may be associated with a higher status, which can result in borrowing despite the lack of a 'need' for it. In other words, speakers in the recipient language adopt such new words in order to be associated with the prestige of the donor language. Australian Indigenous languages often borrow replacement vocabulary when a word becomes temporarily taboo due to the death of a person with that name or a name sounding similar to the word, which then becomes taboo for a period of months or even several years. This even prompted the borrowing of the first person pronoun 'me' from English when *ngayulu* 'I' became taboo in Ngaanyatjarra (Dixon, 1980).

In addition to the higher prestige ascribed to the other language and the need in the recipient language, there could be other diverse motivations for lexical borrowing. Some culture-specific vocabulary is more likely to be borrowed (Haspelmath & Tadmor, 2009; Hock & Joseph, 1996) rather than other basic concepts. Grammatical function words such as prepositions, articles, etc., which are inherent and usually expressed and used daily by speakers in a speech community, are more resistant to borrowing.

2.2 The Process of Language Borrowing

The process of a loanword entering the recipient language is complex. Initially, the loanword is used as a code switch (Poplack et al., 1988). Then, it is repeated over time until it spreads into the recipient language community. This gradual process involves integrating linguistic and social forms of foreign items into a well-established 'bona fide' loanword (Poplack et al., 2020; Poplack & Dion, 2012). Loanwords might be introduced by bilinguals or monolinguals with limited access to the L2 (Calabrese & Wetzels, 2009). This could happen orally, as when monolinguals hear words in the media or while travelling (Cohen, 2009) or see words written on many products. In other words, loanwords may be borrowed through oral speech by immediate contact between the people and in written form by indirect contact through other media. Oral borrowings occurred chiefly in the early periods of history (through trade). They are usually short and have undergone more changes. Written borrowings preserve their spelling and sometimes pronunciation. They are often rather long and literary. Sometimes borrowed words may develop aberrant pronunciations relative to the source language due to pronouncing the written word according to the recipient language conventions.

In addition, another case of borrowing shows the case of underapplication. McCarthy (2004) suggests that the shape of borrowed words is not as expected. The

normal application suggests that a certain phoneme X is expected to change to the phoneme Y. However, it unexpectedly changes to a different phoneme Z. In the case of borrowing, and this phenomenon is shown by excessive changes of phonemes from a donor language to certain phonemes in the recipient language. However, the donor phonemes already exist within that language. The following examples, adapted from Sah and Jaafar (2021), are examples of English and Malay loanwords within Bugis.

(a)	honey	/hʌnĩː/	wani	/wanĩ/	English
(b)	*besi*	/bəsi/	bassi	/bassi/	Malay
(c)	*rebah*	/rəbah/	rebba	/rəbba/	Malay
(d)	*gula*	/gula/	golla	/golla/	Malay
(e)	*laki*	/laki/	lakai	/lakai/	Malay
(f)	*lupa*	/lupa/	lupai	/lupai/	Malay

In Bugis, high and low front /i/ and /a/ are frequently found in a final open syllable of a word, such as in (a) - (d). Therefore, it is expected that *laki* 'man' and *lupa* 'to forget' in (e) and (f) would be borrowed without any sound change because the vowels have the exact match in the recipient language. However, the change does occur, where both /a/ and /i/ change to /ai/, suggesting that /ai/ is the identity of Bugis. The same case of language identity has also been found in Iraqw, a Cushitic language spoken in northern Tanzania, where the consonant /l/ in Swahili, the national language of Tanzania, changes to /r/ when it is borrowed in Iraqw, although both languages have /l/ (Mous & Qorro, 2009). In Iraqw, the word for 'flute' is *filiimbi*, borrowed from Swahili *firimbi*.

2.3 Acehnese and Bahasa Indonesia Vowel System

Acehnese and Bahasa Indonesia both belong to the Malayo-Chamic branch of the Austronesian language family (Abtahian et al., 2016; Yusuf et al., 2022b). However, Acehnese phonology is much more complex than Bahasa Indonesia phonology, and there is considerable diversity across dialects of Acehnese. As most of the Indonesian population speak Bahasa Indonesia as a second language, there is considerable variation at the phonetic level depending on the substrate language of the speaker.

Bahasa Indonesia and Acehnese have quite different vowel phoneme inventories. Compared to Bahasa Indonesia, which only has six vowel phonemes plus three diphthongs (Echols & Shadily, 1989), Acehnese has a much more complex vowel inventory with ten vowel qualities, oral and nasal vowels and many diphthongs (Durie, 1985). North Acehnese has ten oral monophthong vowels, seven nasal monophthongs, 12 oral diphthongs, many of them involving schwa as the second element, and five nasal diphthongs (Asyik, 1987), whilst West Acehnese has considerably fewer diphthongs (Zulfadli, 2014). The Acehnese vowel system, irrespective of the dialect, possesses all the Indonesian monophthongs and two of the three Indonesian diphthongs. The Indonesian front and back mid vowels have two easily identifiable allophones. The front-mid vowel /e/ has an allophone [ɛ] in closed syllables. Likewise, the back mid vowel /o/ has an allophone [ɔ] in closed syllables. Whilst these two vowels [ɛ] and [ɔ] are merely allophones in Indonesian, they are separate phonemes in Acehnese (see Figure 1 and Figure 2). The Acehnese nasal vowels and nasal diphthong

phonemes seem not to be involved in loanword phonology, so they are not discussed further in this paper.

Acehnese				Indonesian		
i	ɯ	u	High	i		u
e	ə	o	High-mid	e	ə	o
ɛ	ʌ	ɔ	Low-mid	ɛ		ɔ
	a		Low		a	

Figure 1. North Acehnese oral monophthong vowels (Asyik, 1987) and Indonesian monophthongs, including prominent allophones (van Zanten & van Heuven, 1984)

Acehnese				Indonesian		
iə	ɯə	uə	High			
		ui				
	əi	oi	High-mid			oi
ɛə	ʌə	ɔə	Low-mid			
	ʌi	ɔi			au	
	ai		Low		ai	

Figure 2. Oral diphthong vowels of North Acehnese (Asyik, 1987) and Indonesian (van Zanten & van Heuven, 1984)

2.4 The Present Study

Borrowing is a universal phenomenon which occurs in all of the world's languages, and in all cases, borrowed words are phonologically integrated into recipient languages. In the Acehnese language, Rizka (2017) has previously addressed this case and presented the types of language borrowing. However, the integration of loanwords into Acehnese was excluded from the study. Firdaus (2011) addressed Acehnese loan words from Arabic and discovered some phonological processes involved, but the conditions of these processes still needed to be addressed. Another related study was conducted by Iskandar et al. (2020), who established a phonemic correspondence between Acehnese and Bahasa Indonesia, which can be used as a basis to analyse language borrowing between both languages. Based on the previous studies, the motivation of phonemic changes as a process of lexical integration remains under-researched. In addition, these changes might not apply across the dialects of Acehnese since each dialect has its own identity. Therefore, the present study, which focuses on vowels, is intended to analyse the integration of Bahasa Indonesia loanwords in the four dialects of Acehnese, namely the Greater Aceh dialect, Pidie dialect, North Aceh dialect, and West Aceh dialect.

3. RESEARCH METHOD

3.1 Research Design

This qualitative research explores the integration of Indonesian loanwords in four different dialects of Acehnese, including North Acehnese, Pidie, Greater Acehnese, and West Acehnese.

3.2 Research Informants

The data were obtained from four native speakers of Acehnese, each drawn from a different dialect background. The informants were selected by considering their language knowledge and were deemed representative of the dialect spoken. Their language knowledge was determined by their nativeness of the target Acehnese dialect. They speak the dialect fluently and have not left the dialect-speaking area until they completely acquire the language. Although they were also fluent in Bahasa Indonesia, they learnt this language much later after acquiring Acehnese. They were all lecturers or postgraduate students at Universitas Syiah Kuala, a state university in Banda Aceh. Appointments were made with the informants individually before interviews were carried out. They were also asked to give and sign their consent prior to the interviews.

3.3 Data Collection and Instrument

The instruments used for this research was a list consisting of 285 loanwords from Bahasa Indonesia. Because of the lack of research into Bahasa Indonesia loanwords in Acehnese, the research instrument was constructed by the researchers based on well-established Malay/Indonesian loanwords most commonly found in contemporary Acehnese. Suspected cognates were not included in the list. In addition, as a point of comparison, a brief exploratory study was made of a supplementary list of 54 loanwords of English origins, most relating to recently developed technologies, which are well-known and used frequently. Examples include *komputer* 'computer', *skɛn* 'scan', *aplod* 'upload' and *bɛŋ* 'bank'.

For the data collection, the language informants were asked to read aloud the pre-prepared list as they would be pronounced in their dialect of Acehnese. As each informant only speaks one dialect, instruction on dialect selection was unnecessary. Therefore, they were only asked to read the words on the list naturally. The language informants were recorded while reading the list's words in a quiet environment. The informants were instructed to read both Acehnese and Bahasa Indonesia versions for the additional list of loanwords of English origin. Because the analysis involved auditory techniques, the informants were asked to repeat the words several times. The researchers used a Tascam DR-100 recording device, commonly used in phonetics research.

3.4 Data Analysis

The data were then analysed using an auditory technique. The authors listened carefully to the recording without using computer software, and phonemic transcriptions were compared with their Indonesian correspondences. The analysis was conducted using a qualitative analysis approach proposed by Miles et al. (2014), i.e. a) data condensation, b) data display, and c) conclusion or verification. In data condensation, vowels were grouped based on their correspondences, and the number of occurrences was recorded. In data display, the vowel changes in each correspondence were presented in figures with different colours to mark the manner and degree of integration. In this research, a conclusion was drawn about the patterns of vowel integration into the four dialects of Acehnese, presented in the result section

based on the type of changes following a grounded theory approach recommended by Budasi et al. (2021).

4. RESULTS

Whilst most Acehnese are fluent bilinguals in Acehnese and Bahasa Indonesia when they utter these loanwords within their Acehnese, they are pronounced in quite different ways from when spoken within Bahasa Indonesia. Whilst some of the differences in pronunciation are due to the assimilation of these words into Acehnese's sound system, most differences result from the replacement of sounds that already occur within Acehnese. Differences in pronunciation due to assimilation mostly concern consonants, which have been reported and discussed in another paper to complement this one (Aziz et al., 2022).

A comparison of the Indonesian vowels in this sample of 285 loanwords reveals a staggering 76 different vowel correspondences. There are 59 different vowel changes; five epenthetic vowels were introduced, and four were deleted. There are instances of the preservation of the original Indonesian vowels in all cases except for the diphthong /ai/, whilst the diphthong /au/ is preserved in just one instance and only for the Pidie dialect. There are no instances of Bahasa Indonesia /ui/ in the data set. A few of these vowel changes are highly productive. For instance, there are 56 instances of i > e and 54 instances of ə > ɯ. However, many vowel changes are one-offs or limited to a few words. Because Acehnese already has all the vowels of Bahasa Indonesia except for the diphthong /au/, few of these vowel changes are instances of assimilation. This result is summarised in Table 1, and the complete list is presented in the Appendix.

Table 1. Summary of the findings.

Indonesian vowels	No of vowel correspondence in Acehnese	Number of occurrences				
		All dialects	NA	WA	GA	P
a	14	230	191	192	191	214
e	3	6	5	5	5	6
ə	6	123	70	69	69	83
ɛ	4	17	11	11	11	12
i	13	133	104	103	104	107
o	5	52	36	37	37	44
u	10	140	113	112	112	124
ɔ	0	0	0	0	0	0
ai	6	8	6	6	6	7
au	10	10	5	6	6	8
Ø	5	15	9	13	10	9
Total	71	719	541	541	541	605

Note:
NA = North Acehnese
WA = West Acehnese
GA = Greater Acehnese
P = Pidie

Vowel changes include lowering, raising, fronting, backing, diphthongisation, deletion, addition (epenthesis) and some are governed by phonotactic constraints

(restricted to closed or open syllables, final or initial syllables). Most of the vowels, though not all, in the first syllable of Indonesian loanwords are unchanged. It is the final syllable that is most affected. The changes can be grouped into some patterns, i.e. monophthongs, diphthongs, changes in both directions, epenthetic vowels, deleted vowels, one-off vowel changes, diphthongisation, and syllable deletions. In addition, the changes occurring in words in the supplementary list are provided separately.

4.1 Monophthongs

The six Bahasa Indonesia monophthongs are all involved in various phonological changes. Lowering the high vowels /i/ and /u/ in the final syllable is almost regular though there are a handful of exceptions, often restricted to one or two dialects. Interestingly, these changes also go in the opposite direction. However, their distribution is somewhat different. High vowels in the final syllable and predominantly in closed final syllables are lowered (/i/ > /e/ (56 examples), /i/ > /ɛ/ (nine instances); /u/ > /o/ (53 instances), /u/ > /ɔ/ (three instances)). There are just three examples of lowering of /i/ > /e/, three examples of /u/ > /o/, and one example of /u/ > /ɔ/ in a final open syllable, and there is just one example (*listrik* > *lestre?*) of lowering of i > e in the first syllable of a disyllabic word, occurring only in the North Aceh dialect. The words where the final high vowel in an open syllable is lowered in this way are all words which we might imagine have been in Acehnese for a long time, namely *padi* 'harvested rice', *baru* 'new', *lembu* 'cattle', *pintu* 'door' and *cucu* 'grandchild'. There are 14 examples (out of 47) where /i/ in a final closed syllable is retained, but this is usually restricted to one or two dialects. Only *ketik* 'tick' and *kumis* 'moustache' retain the /i/ vowel across all dialects. Similarly, there are only six out of 58 words where /u/ is retained in the final syllable, and none of these examples applies to all dialects.

There are 17 instances where this sound change goes in the opposite direction (/o/ > /u/). Out of these 17 instances, all but one occurs in the penultimate syllable. The one exception is *polisi* 'police', where /o/ in the first syllable of a trisyllabic word is replaced by /u/, but this only occurs in the West Aceh dialect. In the other dialects, /o/ in *polisi* 'police' remains /o/. It seems impossible to predict whether the /o/ will be raised to /u/ as there are almost as many as 13 examples where /o/ in the penultimate syllable remains /o/ (in similar environments) or in several instances penultimate /o/ > /ɔ/ or /ɯ/. In the three instances where /o/ > /ɯ/, this is always in the penultimate syllable. Two instances are restricted to the Pidie dialect, whereas for *korban* > *kurbun* (Pidie), *kurɯbuən* (North Acehnese), *kuʁɯbun* (West Acehese and Greater Acehnese) 'sacrifice', /o/ > /ɯ/ in all dialects. It might be a case of vowel harmony in this particular word as the same vowel /ɯ/ persists across all syllables in the word. Corresponding raising of /e/ > /i/ or /ɛ/ > /i/ do occur, but rarely, only in */lem/* > */lim/* 'glue' (Pidie dialect only), whilst *merah* > *mirah* 'red' (Pidie, North Acehnese, West Acehnese), *perak* > *pirak* 'silver' (Pidie and West Acehnese).

Schwa is often raised to the high back unrounded vowel /ɯ/. This occurs more often in the West Aceh dialect (55 out of 58 instances) and least in the Greater Aceh dialect (32 out of 58 instances). But schwa also often remains schwa (43 instances in total). It remains schwa in all dialects in just four words; *gergaji* 'saw', *Jerman* 'German', *jernih* 'clear' and *terjun* 'jump down'. Whilst /ə/ to /ɯ/ is a frequently occurring sound change, it is impossible to predict. For instance, schwa is preserved

in *menantu* ‘in law’ but replaced by ɯ in *menasah* ‘praying room’, *menurut* ‘according to’, etc. in all dialects even though these three words have the same *me–* verbal prefix.

The low vowel /a/ is also replaced by the high back unrounded vowel /ɯ/ in a fair number of words (26 in all). This change occurs in a final closed syllable with just three exceptions: *jahat* ‘bad’ (/a/ is replaced in both syllables in Pidie and North Aceh), *maksud* ‘to mean’ (Pidie only) and *masjid* ‘mosque’ (North Aceh, West Aceh and Greater Aceh). There are also many instances where /a/ in a final closed syllable is unchanged across all dialects in similar phonetic environments. There are nine instances where /a/ > /ɯə/ in a final closed syllable in some dialects, but always where /a/ > /ɯ/ in the remaining dialects. This diphthongisation only occurs preceding the consonants /s/, /r/, /l/ and /ŋ/. The final /s/, /r/ and /l/ are deleted (Aziz et al., 2022), providing a phonetic motivation. Moreover, there are many examples where the final vowel preceding /ŋ/ is not replaced with /ɯ/ and one example where the /ɯ/ does not diphthongise in any dialect. Actually, two Bahasa Indonesia homophones in the data set behave differently.

Compare:

- *pasang* ‘pair, set’ > *pasaŋ* (North Acehnese), *paSaŋ* (Pidie and West Acehnese), *paϴaŋ* (Pidie and Greater Acehnese)
- *pasang* ‘rise’ (of the tide) > *pasɯŋ* (Pidie), *paϴɯŋ* (Greater Acehnese), *pasɯəŋ* (North Acehnese) and *pasɯəŋ* (West Acehnese)

So in the case of *pasang* ‘pair, set’, the vowels are unchanged, but in *pasang* ‘rise’, the final vowel is replaced by ɯ in all dialects, which diphthongises in the North Aceh and West Aceh dialects. So quite clearly, there is something other than phonological constraints operating here. When diphthongisation/a/ > /ɯə/ occurs, it always occurs in all nine instances in the North Aceh dialect, on three occasions in the Pidie dialect and just once in West Acehnese.

There is just one case in a final open syllable, where /a/ is replaced by /ɤ/ in *raya* ‘great’, but many examples include *kebaya* ‘traditional Javanese female blouse’ where both the /a/ vowels are unchanged. Furthermore, the raising of schwa to i in an unstressed first syllable (five instances) is associated with a stress shift to the first syllable in polysyllabic words, as in *se’kolah* ‘school’ > *sikula*.

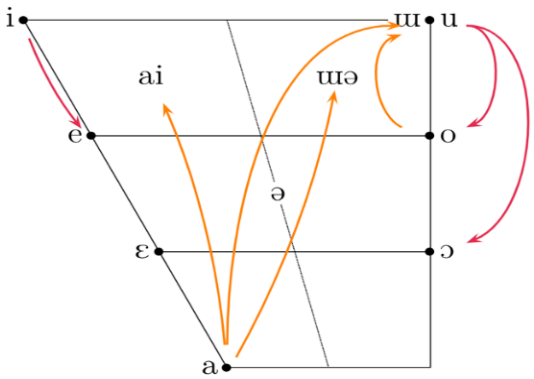

Figure 3. Frequently occurring substitutions for Indonesian monophthongs (red line: from high to mid vowels, orange line: from low/mid to high vowels).

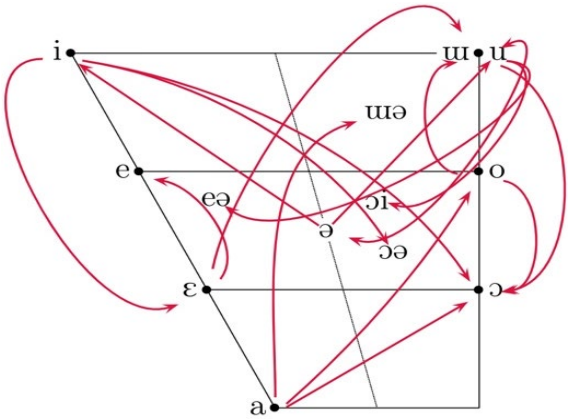

Figure 4. Substitutions for Indonesian monophthongs occurring between three and nine times.

4.2 Changes Occurring in Both Directions

The lowering of /u/ > /o/ and raising of /o/ > /u/ has already been discussed. Whilst /i/ is often lowered to /e/ (56 instances) or /ɛ/ (nine instances), changes in the opposite direction are rare. The mid vowel /e/ is raised just once in *lem* 'glue' but only in the Pidie dialect, whilst /ɛ/ is raised more often, /ɛ /> /i/ occurs in *merah* 'red' (in Pidie North Aceh and West Aceh dialects) and *perak* 'silver' (in the Pidie and West Aceh dialects). The high back vowel /u/ is lowered to schwa in five instances, whilst schwa is raised to /u/ in six instances.

4.3 Epenthetic Vowels

There are 13 instances in the data set where an epenthetic vowel is introduced. Epenthesis concerning vowels only occurs within a consonant cluster and most often within the West Aceh dialect, where it occurs in all 13 instances. Epenthetic vowels are always central or back vowels, with insertion of /ɯ/ being the most common (in ten of the 13 instances). An epenthetic schwa occurs twice, whilst the epenthetic /u/, /o/ and /ɔ/ occur just once and then only in one or two dialects. While an epenthetic /ɯ/ is inserted in *Jerman* 'German' and *jernih* 'clear' in all dialects, it never occurs in *cermin* 'mirror' in a very similar phonetic environment. Epenthesis most often occurs in clusters where the first element is a liquid.

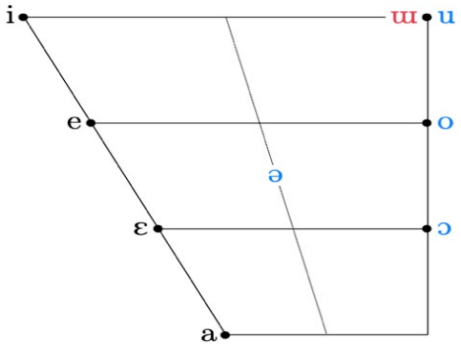

Figure 5. Frequently occurring epenthetic vowels (red font: frequent; blue font: only once or twice in the data set).

4.4 Deleted Vowels

There are 17 cases where Indonesian vowels are deleted. Most of these instances concern schwa in the unstressed penultimate syllable (eight cases) and mostly preceding a liquid. There are another two instances where schwa in the penultimate syllable is deleted, and in both these cases, it is unstressed in Bahasa Indonesia: *karena* 'because' and *sejahtera* 'prosperous'. There are five instances where /a/ is deleted, but three are regular sound changes where /a/ > Ø/#C_h is in every instance in the data set. The remaining four examples are sporadic:

- penultimate /a/ > /Ø/ in *tentara* 'army' (all dialects)
- penultimate /e/ > /Ø/ in *gelang* 'bangle', *gerak* 'movement' (all dialects)
- penultimate /u/ > /Ø/ in the second syllable of *kerudung* 'veil' (Pidie only)

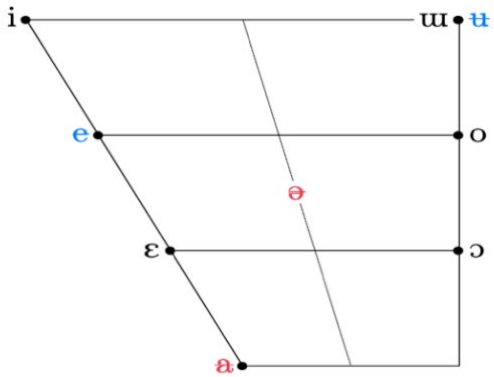

Figure 6. Deleted Indonesian monophthongs (red font: frequently deleted; blue font: sometimes deleted).

4.5 Other One-off Vowel Changes

A large number of vowel changes are one-off changes occurring in just one word in the data set. Most of these one-off vowel changes occur between vowels shared by both Bahasa Indonesia and Acehnese and are not phonologically motivated. Substitution of /i/ for /a/ in *menantu* 'in law' occurs in the speech of all five consultants yet does not occur in *menasah* 'praying room' or any other word in the data set. Similarly, /a/ > /u/ in *imam* 'Islamic leader' in all dialects, though this vowel substitution is not found in *hitam* 'black', *kolam* 'pool' or other m-final words. Whilst these two vowel changes occur in all dialects, many of the one-off vowel replacements are restricted to just one or maybe a few dialects. For instance, the high front vowel is lowered to schwa once (and only in West Acehnese).

As seen from the diagram in Figure 7, many of these one-off substitutions involve the replacement of /i/ and /a/. Still, most of the other vowels also participate in occasional one-off substitutions.

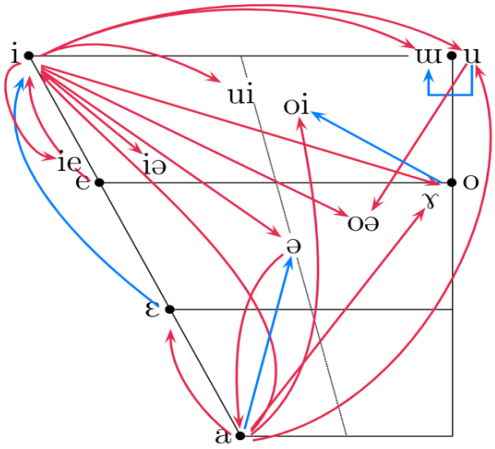

Figure 7. Substitutions for Indonesian monophthongs occurring only once or twice (red font: occurring only once, blue font: occurring twice).

4.6 Diphthongisation

All six Indonesian monophthongs undergo diphthongisation, though many of these changes are restricted to North Acehnese. The strongest diphthongisation processes are associated with the deletion of final consonants:

- /u/ > /oi/ _ /s/, /l/; /s/, /l/ > /Ø/_#
- /o/ > /oi/ _/s//, /l/; /s/, /l/ > /Ø/_#
- /a/ > /ai/_ /s/, /l/; /s/, /l/ > /Ø/ (in Pidie and North Acehnese dialects only)
- /a/ > /oi/_/s/# (in just one word in the Pidie dialect only)

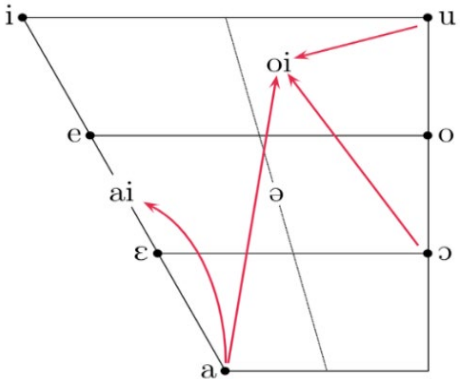

Figure 8. Diphthongisation in Indonesian loanwords in Acehnese associated with the deletion of final consonants.

The /a/ > /ai/ rule applies in all cases before l, except in the word *misal* 'example' in the Pidie, North Aceh and West Aceh dialects. This rule only applies 50% of the time in the Greater Aceh dialect in our study. The /a/ > /ai/ rule applies most of the time in the Pidie and North Aceh dialects, but there are exceptions in *luas* 'extensive' where /s/ is replaced by /h/. However, the /a/ vowel does not diphthongise in *lemas* 'weak' where the /a/ vowel is replaced by /o/ in North Aceh and Greater Aceh, by /ə/ in West Aceh and by the diphthong /oi/ in Pidie. There is just one instance of a /r/–final word where /a/ in the last syllable is diphthongised (*pasar* > *pasai* 'market'). However, there are nine /r/ final words following /a/, which seem not to be subject to diphthongisation, and there are also /r/ final words following /u/ and /o/, which are not

subject to diphthongisation either. So *pasar* 'market' is probably best regarded as a one-off aberration.

The vowels/i/, /u/ and /a/ undergo diphthongisation to a diphthong where the second element is a schwa. However, in almost all cases, this type of diphthongisation is restricted to the North Acehnese dialect. These include:

- /i/ > /ɔə/_# (only in North Acehnese)
- /i/ > /oə/_# (occurs in just one word in North Aceh dialect)
- /i/ > /iə/_r#; /r/ > /Ø/ (occurs only in North Aceh dialect)
- /u/ > /eə/ _# (occurs in 5 words in the North Aceh dialect and three words in the Pidie dialect)
- /u/ > /ɛə/_# (only in North Acehnese)
- /u/ > /oə/ _r#; r > Ø (occurs in just one word in North Aceh and Pidie dialect)
- /a/ > /ɯə/_C# (only in North Acehnese)

In almost all cases, these instances of diphthongisation are restricted to North Acehnese; in every case, the same vowel change attested in all words is subject to this change in the other dialects without diphthongisation.

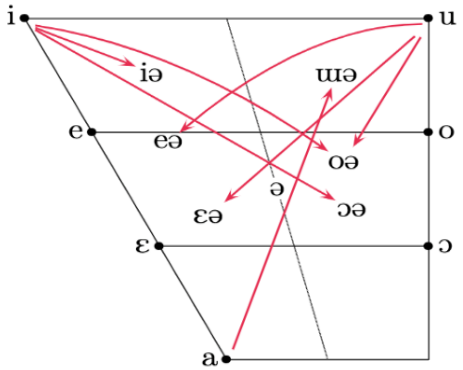

Figure 9. Diphthongisation in Indonesian loanwords in Acehnese where the final element is schwa.

4.7 Bahasa Indonesia Diphthongs

Bahasa Indonesia has three diphthongs: /au/, /ai/, and /ui/. Acehnese has many more diphthongs, the precise number depending on the dialect. North Acehnese has 12 oral diphthongs (Asyik, 1987), with the second vowel being either /ə/ or /i/. As a result, Acehnese does not have Bahasa Indonesia /au/ diphthong. In our data, there are four instances of Bahasa Indonesia loanwords with the diphthong /au/ and six instances of /ai/ but no instances of /ui/ in the data set.

As expected, there are various substitutions for the diphthong /au/. On some occasions, /au/ is replaced by monophthongs /o/ (as in *jauh* 'far'), /e/ in *bau* 'smell; odour', and /ɯ/ in *kerbau* 'buffalo'. In the North Aceh and Pidie dialects, the diphthong /au/ in *bau* and *kerbau* is replaced by the diphthongs /eə/ and /ɯə/, respectively. *Jauh* 'far' employs a different set of sequences *ɟəʔoh* (Pidie), *ɟuʔoh* (north Aceh) and *ɟiʔoh* (West Aceh and Greater Aceh). The diphthong /au/ in *kaum* is replaced by the vowel sequence /ao/ in all dialects. As the vowel sequence /ao/ is the closest in Acehnese to the Bahasa Indonesia diphthong /au/, this is a simple case of phonological assimilation.

The /ai/ diphthong, which is shared by both languages, is replaced by /e/ (in *seprai* 'bedsheet', *balai* 'public hall, office', *kedai* 'shop, café' and *pegawai*

'government official') and by /eʔ/ in *pakai* 'to use, wear'. In North Acehnese, the diphthong in *balai* is replaced by the diphthong /eə/. The diphthong ai in *lain* is replaced by the sequence aʔe as in *laʔen* (all dialects). Whilst the Indonesian diphthong /ai/ is always replaced, we saw previously that this very same diphthong is introduced following the deletion of the final /s/.

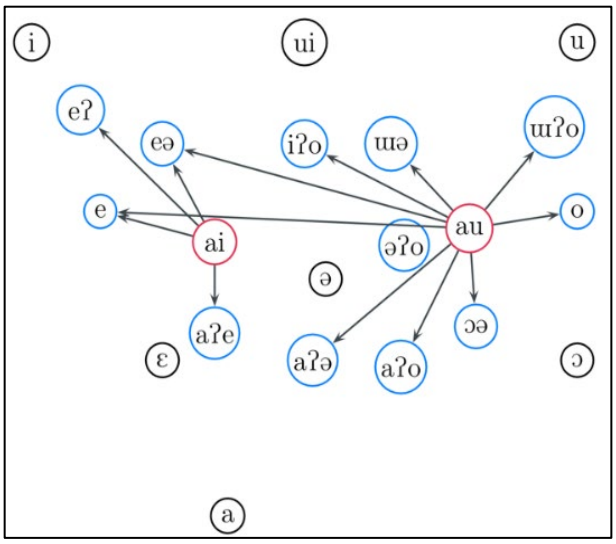

Figure 10. Acehnese correspondences to Indonesian diphthongs.

4.8 Syllable Deletion and Other Abbreviations

There are several sporadic examples of deletion of an entire syllable or even more. In the West Aceh dialect, *cabut* 'to pull out' is abbreviated to *bət* through the deletion of the first syllable and the final vowel /u/ is replaced by a schwa. In the Pidie dialect, *lemari* 'cupboard' is abbreviated to *mari*, again involving deletion of the first syllable. One of the words for 'bicycle' in Indonesian is *kereta angin* (lit. carriage + wind, i.e. 'wind carriage'). It is abbreviated in a variety of ways by the different speakers: *taŋɛn* (Pidie), *itaŋɛn* (Pidie and North Aceh), *gɯʁitan aŋɛn* (Greater Aceh) and *gaʁi* (West Aceh) where the final syllable of the first word is deleted, and the second word is omitted entirely.

4.9 Supplementary List of 54 Recent English/Bahasa Indonesia Loanwords

Some of the recent English/Bahasa Indonesia loanwords in our supplementary list were fully assimilated into the Acehnese sound system, and others were partially or unassimilated. Some minor variation was found between speakers of different dialects of Acehnese, but none of the radical vowel substitutions seen in the main list of 285 Indonesian loanwords, such as low vowels replaced by high vowels or front vowels replaced by back vowels, were encountered. The distinctive Acehnese high back unrounded vowel /ɯ/ was not seen in any of these 54 recent English/Bahasa Indonesia loanwords. The sound changes seen within the supplementary list of English loanwords were simply a result of phonological assimilation. English has many vowels not found in Acehnese, and it is only natural that these be replaced by the closest Acehnese vowel as they become more entrenched within Acehnese.

Interestingly, only a minority of these English loanwords are used in Bahasa Indonesia, which often uses an Indigenous word instead. For instance, where Acehnese uses *mos* ~ *mɔs* 'computer mouse', Bahasa Indonesia has used *tetikus* being partial reduplication of *tikus* 'mouse, rat' as found in Bahasa Indonesia's most comprehensive dictionary, although this word has already become archaic, having been replaced by the borrowed word from English. Thus, many English words in the supplementary list may have come into Acehnese directly from English, whereas others may have come via Bahasa Indonesia.

5. DISCUSSION

Due to assimilation, some sound changes occur when Bahasa Indonesia loanwords come into Acehnese. This is certainly true in the case of the uvular rhotic that replaces the trill or rolled /r/ in West Acehnese and Greater Acehnese. Speakers of both dialects pronounce the alveolar trill /r/ as a uvular rhotic, and the alveolar trill is absent in both dialects (Yusuf et al., 2022a). Therefore, this is a regular sound change. Most sound changes due to assimilation seem to involve consonants and are discussed in detail in a companion paper (Aziz et al., 2022). They are not discussed here further due to length constraints. The only clear instance of assimilation within the vowels is the replacement of the Bahasa Indonesia diphthong /au/ with the closest Acehnese vowel sequence /ao/. Several other sound changes are in response to phonotactic constraints imposed by the Acehnese language, which is called normalised borrowing and is found in previous studies (Cook, 2018; Hafez, 1996; Kim, 2009).

However, most changes evident in the data have no phonological motivation, unlike in most previous studies, which show that the changes derive from the phonological rules of the target language (Chang, 2012; Hamdi, 2017). In the case of Acehnese, the changes are sociophonetic in nature. It has also been found that certain vowel correspondences between Indonesian and the four Acehnese dialects occur very often. A number of 13 out of 76 vowel correspondences have frequencies above ten in the data set. Many different possible sources may account for the variation inherent in this data set.

1. The data set contains a number of unassimilated or partially-assimilated forms. All the Acehnese consultants are academics or postgraduate students and urban dwellers who are fluent Indonesian speakers and regularly speak Bahasa Indonesia for a range of purposes. Had the data been collected in rural areas from informants who speak Acehnese most of the time, it may have been more consistent with regard to the degree to which the loanwords exhibit distinctive Acehnese phonological features.
2. Acehnese has been in contact with Malay for many years, as evidenced by the letter written in Malay that Sultan Iskandar Muda sent to King James I of England in 1615 (Gallop, 2011). Loanwords may have entered at different times when different sound laws were operable.
3. *Imum* 'Islamic leader' is clearly a loanword, but we would expect *imam*, so what is the source of the vowel u in the second syllable? Was *imum* borrowed via Bahasa Indonesia, or did it come into Acehnese directly from Arabic? If it was first encountered in written form, usually the vowels of Arabic are not written, only the consonants and a reader is obliged to supply the vowels if it is to be read aloud. A

number of other Islamic terms of Arabic origin may also have been borrowed directly from Arabic, as found by Firdaus (2011). *Sikin* 'knife', for example, was borrowed into Acehnese from Arabic *sikinun* (سِكِّيْن) /sikinun/ rather than *pisau* 'knife' from Bahasa Indonesia. Another word borrowed directly from Arabic into Acehnese is *musala,* which in Arabic is *mushalla* (مُصَلًّى), 'praying mat'. Indonesian also borrows this word from the language where it appears as *musholla* ~ *musolla* ~ *musalla*, but with a different meaning, 'the praying building or room', which is not the same as the original Arabic word. Acehnese, however, adopts the original meaning, which proves that Acehnese borrowed the word directly from Arabic even though the Indonesian word is as close, if not closer, phonologically to the original Arabic word. This example proves the hypothesis that some Arabic words were likely to have been borrowed into Acehnese directly. This is supported by the fact that Aceh has been known as *Serambi Mekkah* (Veranda of Mecca), reflecting the role played by Aceh as the first and main gateway through which Islam was introduced into the Indonesian archipelago (Donner, 2016).

4. Some one-off changes may be the result of original mishearing. The speakers might have caught the sound differently when they heard the original words from Bahasa Indonesia. This common phenomenon occurs during the adaptation of sounds, as proposed in the acoustic approximation model (Calabrese, 2009).
5. Some variability is due to pre-existing dialect differences within the Acehnese language. For example, *keh* /keh/ 'pocket' in North Acehnese is *baluem* /baluəm/ in Pidie and Greater Acehnese and *ipok* /ʔɪpoʔ/ in West Acehnese.
6. There is some widely accepted variation in the pronunciation of Bahasa Indonesia words within Bahasa Indonesia itself. For example, *masjid* ~ *mesjid* 'mosque'; *'karena* ~ *ka'rena* ~ *'karna* 'because'.

While we can account for some of the changes with well-motivated phonological explanations, we are left with the inescapable conclusion that most phoneme substitutions and additions involving vowels are sociophonetic. In particular, the introduction of the phoneme /ɯ/ and diphthongs involving schwa are not motivated by phonology. The phoneme /ɯ/ seems to serve as a badge of Acehnese identity. Regardless of the method of elicitation, decontextualised in this case, we can still conclude that the use of /ɯ/ signals Acehnese identity. The substitution of the vowel /ɯ/ for other vowels in Bahasa Indonesia is not conditioned because Acehnese already has exact correspondences and is frequently found in the same context. For example, *korban* /kɔrban/ 'sacrifice' changes to *keureubeuen* /kɯrɯbɯən/ (/ɔ/ → /ɯ/), while /ɔ/ is found in the same environment in Acehnese, such as *koh* /kɔh/ 'to cut. This identity is emphasised by the insertion of this vowel /ɯ/ (/kɯrɯ̲bɯən/), not other vowels, to avoid coda /r/. This vowel is not found in Bahasa Indonesia or most other local languages in Indonesia (Perwitasari, 2019).

There are numerous other sporadic changes which are unmotivated. Another change, this time affecting consonants, is the occasional sporadic epenthetic /h/ following a stop which serves to produce the distinctive Acehnese /ph/, /bh/, /th/, /jh/, /kh /and /rh/ consonant clusters (see Aziz et al., 2022 for further details) also seems not to be phonologically motivated but serves to make a statement of identity, as found in Iraqw (Mous & Qorro, 2009). Thus, the result is distinctive and perhaps unique to a few languages because it is rarely found in other languages throughout the world.

6. CONCLUSION

The most prominent finding to emerge from this study is that very often, the vowels of Bahasa Indonesia loanwords underwent various sound changes as they were adopted into Acehnese. Acehnese already has all the vowels of Bahasa Indonesia except for the diphthong /au/. Yet, when it adopts Bahasa Indonesia loanwords, various vowel substitutions are made, often involving the replacement of Bahasa Indonesia /i/, /a/ and /ə/ with the back unrounded vowel /ɯ/ as well as other vowel changes. An epenthetic back unrounded vowel /ɯ/ is also inserted to break up consonant clusters as per Acehnese phonotactic rules or constraints. It also seems that different dialects of Acehnese behave differently in regard to these vowel substitutions. It would appear that the sound changes described here belong to a particular period prior to 2004, as these sound changes appear no longer operable. The current flood of English/Bahasa Indonesia loanwords, many of them relating to new technologies, are unaffected.

As an implication, the results of this study have provided a base to determine phonological constraints in Acehnese. These constraints can be used to analyse rankings of constraints in Acehnese using Optimality Theory. Therefore, a further study can analyse borrowing in Acehnese from Bahasa Indonesia and other languages using Optimality Theory analysis, as conducted by Sah and Jaafar (2021), to analyse Bugis borrowing of words from certain other languages. In addition, other operations in Acehnese, such as reduplication and assimilation, can be analysed using Optimality Theory.

The results of this study are subject to certain limitations. This investigation focused on sound changes in relation to the vowels in Bahasa Indonesia/Malay loanwords. Consonant changes and adaptations have also been investigated (see Aziz et al., 2022). In addition, this study focused on well-established genuine loanwords from Bahasa Indonesia and tried to exclude lexical cognates. However, it is sometimes difficult to differentiate between cognates and borrowings in genetically related languages such as Bahasa Indonesia and Acehnese. Further detailed research should focus on cognates to complete the picture of the complex relationship between Acehnese and Indonesian.

There is also a need to further study the nature of the variability encountered in this investigation. An empirical study of these 285 loanwords is needed that takes into account a range of variables, including dialect background, rural versus urban, formality, age, gender, occupation and level of education attained. This should determine the degree to which the changes in pronunciation of these loanwords in Acehnese relative to the source language seen here in our study are fixed and normative. However, the investigation carried out here in this paper clearly establishes that the majority of these sound changes are not the result of phonological assimilation but rather seem to be an act of Acehnese identity at a period in history when Aceh was trying to establish itself as an independent state.

REFERENCES

Abtahian, M. R., Cohn, A. C., & Pepinsky, T. (2016). Modeling social factors in language shift. *International Journal of the Sociology of Language, 2016*(242), 139-170. https://doi.org/10.1515/ijsl-2016-0036

Adelaar, A. (2009). Language documentation in the West Austronesian world and Vanuatu: An overview. In M. Florey (Ed.), *Endangered languages of Austronesia* (pp. 12-42). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199544547.003.0002

Adisaputera, A., Pane, A., Kembaren, F. R. W., & Tarigan, T. M. (2015). The influence of language in religious court in Indonesia VS the influence of religious court at language in Indonesia. *IOSR Journal of Humanities and Social Science, 20*(9), 38-44.

Al-Auwal, T. M. R. (2017). Reluctance of Acehnese youth to use Acehnese. *Studies in English Language and Education, 4*(1), 1-14. https://doi.org/10.24815/siele.v4i1.7000

Al-Auwal, T. M. R. (2022). *A study of young Acehnese-Indonesian bilingual adults in Aceh* [In-progress doctoral dissertation]. University of Adelaide.

Al-Harbi, A. A. A. (1991). Arabic loanwords in Acehnese. *Perspectives on Arabic Linguistics*, *80*, 93-118. https://doi.org/10.1075/cilt.80.07ala

Alvanoudi, A. (2017). Language contact, borrowing and code switching: A case study of Australian Greek. *Journal of Greek Linguistics, 18*, 1-42. https://doi.org/10.1163/15699846-01701001

Amery, R., & Aziz, Z. A. (2020). Enumeration and classifiers in Pulau Simeulue/Pulau Banyak languages, Aceh. *The Journal of Asian Linguistic Anthropology, 2*(1), 11-22. https://doi.org/10.47298/cala2019.14-1

Anderbeck, K. L. (2010). *Language use and attitudes among the Jambi Malays of Sumatra*. SIL International.

Arka, I. W. (2013). Language management and minority language maintenance in (eastern) Indonesia: Strategic issues. *Language Documentation and Conservation, 7*, 74-105. http://hdl.handle.net/1885/54107

Asyik, A. G. (1987). *A contextual grammar of Acehnese sentences* [Doctoral dissertation, The University of Michigan]. University of Michigan Library. https://hdl.handle.net/2027.42/161507

Aziz, Z., & Amery, R. (2016). The effects of a linguistic tsunami on the languages of Aceh. *Studies in English Language and Education, 3*(2), 100-108. https://doi.org/10.24815/siele.v3i2.4958

Aziz, Z. A., Amery, R., & Mustafa, F. (2022). Consonant changes in loanwords borrowed from Indonesian into dialects of Acehnese. *The Journal of Asian Linguistic Anthropology, 4*(4), 1-19. https://doi.org/10.47298/jala.v4-i4-a1

Balai Bahasa Banda Aceh. (2012). *Inilah bahasa-bahasa di Aceh* [These are the local languages in Aceh]. Balai Bahasa Banda Aceh.

Budasi, I. G., Satyawati, M. S., & Anggayana, W. A. (2021). The status of lexicon used in Tabuh Rah ritual in Menyali Village North Bali: An ethnolinguistic study. *Kasetsart Journal of Social Sciences, 42*(4), 960-967. https://doi.org/10.34044/j.kjss.2021.42.4.33

Calabrese, A. (2009). Perception, production and acoustic inputs in loanword phonology. In A. Calabresa & W. L. Wetzels (Eds.), *Loan phonology* (pp. 59-113). John Benjamins. https://doi.org/10.1075/cilt.307.03cal

Calabrese, A., & Wetzels, W. L. (2009). Loan phonology: Issues and controversies. In A. Calabresa & W. L. Wetzels (Eds.), *Loan phonology* (pp. 1-10). John Benjamins. https://doi.org/10.1075/cilt.307.01cal

Campbell, L. (2013). *Historical linguistics: An introduction* (3rd ed.). Edinburgh University Press.

Chang, C. B. (2012). Phonetics vs. phonology in loanword adaptation: Revisiting the role of the bilingual. *Proceedings of the Annual Meeting of the Berkeley Linguistics Society*, *34*(1), 61-72. https://doi.org/10.3765/bls.v34i1.3557

Clyne, M. (2004). *Dynamics of language contact.* Cambridge University Press.

Cohen, E. G. (2009). *The role of similarity in phonology: Evidence from loanword adaptation in Hebrew* [Unpublished doctoral dissertation]. Tel Aviv University.

Cook, A. (2018). A typology of lexical borrowing in Modern Standard Chinese. *Lingua Sinica*, 4(1). https://doi.org/10.1186/s40655-018-0038-7

Dixon, R. M. W. (1980). *The languages of Australia.* Cambridge University Press.

Donner, F. M. (2016). Conquest and expansion. In R. C. Martin (Ed.), *Encyclopedia of Islam and the Muslim world* (pp. 242-250). Gale Cengage Learning.

Durie, M. (1985). *A grammar of Acehnese on the basis of a dialect of North Aceh.* Foris Publications.

Echols, J. M., & Shadily, H. (1989). *Kamus Indonesia Inggris* [Indonesian - English dictionary]. P.T. Gramedia.

Epps, P. (2014). Historical linguistics and socio-cultural reconstruction. In C. Bowern & B. Evans (Eds.), *The Routledge handbook of historical linguistics* (pp. 579-597). Routledge.

Firdaus, W. (2011). Kata-kata serapan Bahasa Aceh dari Bahasa Arab: Analisis morfofonemis [Acehnese loanwords from Arabic: A morphophonemic analysis]. *Sosiohumaniora*, *13*(2), 223-234. https://doi.org/10.24198/sosiohumaniora.v13i2.5518

Gallop, A. (2011). Gold, silver and lapis lazuli: Royal letters from Aceh in the seventeenth century. In R. M. Feener, P. Daly, & A. Reid (Eds.), *Mapping the Acehnese past* (pp. 105-140). KITLV Press. https://doi.org/10.1163/9789004253599_007

Hafez, O. (1996). Phonological and morphological integration of loanwords into Egyptian Arabic. *Égypte/Monde Arabe*, 27-28, 383-410. https://doi.org/10.4000/ema.1958

Hamdi, S. (2017). Lexical borrowing in Arabic and the role of orthography. *International Journal of Language and Linguistics, 4*(2), 17-32.

Haspelmath, M., & Tadmor, U. (Eds). (2009). *Loanwords in the world's languages: A comparative handbook*. De Gruyter Mouton. https://doi.org/10.1515/9783110218442

Hock, H. H., & Joseph, B. D. (1996). *Language history, language change, and language relationship: An introduction to historical and comparative linguistics*. De Gruyter Mouton. https://doi.org/10.1515/9783110613285

Iskandar, D., Mulyadi, Nasution, K., Hanafiah, R., & Yusuf, Y. Q. (2020). What's perfect and what's not: Indonesian and Acehnese phonemic correspondences. *Pertanika Journal of Social Sciences and Humanities, 28*(3), 2005-2026.

Kim, H. (2009). Korean adaptation of English affricates and fricatives in a feature-driven model of loanword adaptation. In A. Calabrese & W. L. Wetzels (Eds.), *Loan Phonology* (pp. 155-180). John Benjamins Publishing Company. https://doi.org/10.1075/cilt.307.06kim

Lewis, M. P. (Ed.). (2009). *Ethnologue: Languages of the world* (16th ed). SIL International.

Maryanto. (2009). Regional and local languages as languages of oral instruction in Indonesia. In K. Kosonen & C. Young (Eds.), *Mother tongue as bridge language of instruction: Policies and experiences in Southeast Asia* (pp. 69-75). The Southeast Asian Ministers of Education Organization (SEAMEO) Secretariat.

Matras, Y. (2002). *Romani: A linguistic introduction*. Cambridge University Press.

Matras, Y., & Sakel, J. (2007). Investigating the mechanisms of pattern replication in language convergence. *Studies in Language, 31*(4), 829-865. https://doi.org/10.1075/sl.31.4.05mat

McCarthy, J. J. (2004). *Optimality Theory in phonology*. Blackwell Publishing.

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook*. Sage.

Mithun, M. (2014). *Contact-stimulated grammatical extension: From syntax to information structure and back* [Paper presentation]. The Linguistic Association of Finland (SKY), Helsinki area & language studies and the CROSSLING research network, Helsinki, Finland.

Mous, M., & Qorro, M. (2009). Loanwords in Iraqw, a Cushitic language of Tanzania. In M. Haspelmath & U. Tadmor (Eds), *Loanwords in the world's languages: A comparative handbook* (pp. 103-123). De Gruyter Mouton. https://doi.org/10.1515/9783110218442.103

Mustafa, F. (2022). Evidence of (in)applicability of Morphological Doubling Theory in Acehnese reduplication. *EduLite: Journal of English Education, Literature and Culture, 7*(2), 342-355. https://doi.org/10.30659/e.7.2.342-355

Perwitasari, A. (2019). *The acquisition of English vowels by Javanese and Sundanese native speakers* [Doctoral dissertation, Leiden University]. Leiden University Scholarly Publications. https://hdl.handle.net/1887/68575

Poplack, S., & Dion, N. (2012). Myths and facts about loanword development. *Language Variation and Change, 24*(3), 279-315. https://doi.org/10.1017/S095439451200018X

Poplack, S., Robillard, S., Dion, N., & Paolillo, J. C. (2020). Revisiting phonetic integration in bilingual borrowing. *Language, 96*(1), 1-34. https://doi.org/10.1353/lan.0.0241

Poplack, S., Sankoff, D., & Miller, C. (1988). The social correlates and linguistic processes of lexical borrowing and assimilation. *Linguistics, 26*, 47-104. https://doi.org/10.1515/ling.1988.26.1.47

Reid, A. (2005). *An Indonesian frontier: Acehnese & other histories of Sumatra*. Singapore University Press.

Rizka, B. (2017). The lexical process of Acehnese borrowing. *Getsempena English Education Journal, 4*(1), 17-26. https://doi.org/10.46244/geej.v4i1.719

Sah, M. F. M, & Jaafar, S. R. S. (2021). Strategi Adaptasi Kata Pinjaman dalam Bahasa Bugis: Koresponden-OO [Loanword adaptation strategy in Bugis: Correspondence-OO]. *Gema Online Journal of Language Studies, 21*(3), 52-77. https://doi.org/10.17576/gema-2021-2103-04

Sneddon, J. N. (2003). *The Indonesian language: Its history and role in modern society*. UNSW Press

Teeuw, A. (1959). The history of the Malay language. A preliminary survey. *Bijdragen tot de Taal-, Land- en Volkenkunde, 115*(2), 138-156. https://doi.org/10.1163/22134379-90002240

Thomason, S. G. (2001). Contact-induced language change and pidgin/creole genesis. In N. Smith, & T. Veenstra (Eds.), *Creolization and contact* (pp. 249-262). John Benjamins. https://doi.org/10.1075/cll.23.11tho

Thomason, S. G., & Kaufman, T. (1988). *Language contact, creolisation, and genetic linguistics.* University of California Press.

van Zanten, E., & van Heuven, V. J. (1984). The Indonesian vowels as pronounced and perceived by Toba Batak, Sundanese and Javanese speakers. *Bijdragen tot de Taal-, Land-en Volkenkunde, 140*(4), 497-521. https://doi.org/10.1163/22134379-90003411

Weinreich, U. (1979). *Languages in contact: Findings and problems*. The Hague.

Winford, D. (2003). *An introduction to contact linguistics.* Blackwell.

Yusuf, Y. Q. (2013). *A comparative study of vowels in the Acehnese language spoken in Kedah, Malaysia and Aceh, Indonesia* [Doctoral dissertation, University of Malaya]. UM Student's Repository. http://studentsrepo.um.edu.my/id/eprint/4459

Yusuf, Y. Q., Aziz, Z. A., Mustafa, F., & Khatimah, H. (2022a). The unique accent features of the stigmatised Greater Aceh subdialect in Sibreh, Aceh, Indonesia. *International Journal of Language Studies, 16*(2), 143-164.

Yusuf, Y. Q., Fata, I. A., Aziz, Z. A., Surya, D., & Pillai, S. (2022b). Acoustic analysis of an Acehnese dialect: Pidienese oral monophthong vowels. *Dialectologia, 28*, 203-223.

Zulfadli. (2014). *A sociolinguistic investigation of Acehnese with a focus on West Acehnese: A stigmatised dialect* [Doctoral dissertation. University of Adelaide]. Adelaide Research & Scholarship. https://hdl.handle.net/2440/92352