



International Journal Linguistics of Sumatra and Malay (IJLSM)

Journal homepage: <https://talenta.usu.ac.id/ism>



Indonesian Segment Alternations in Cilebut Batavian Malay

Fauzi Syamsuar^{*1}

Universitas Pertiwi, Bekasi, Indonesia

^{*}Corresponding Author: fauzi.syamsuar@pertiwi.ac.id

ARTICLE INFO	ABSTRACT
Article history: Received 5 April 2026 Revised 26 April 2026 Accepted 27 June 2026 Available online 30 June 2026 ISSN: 2986-3848	Indonesian, the national and official language of the Republic of Indonesia, is derived from Standard Malay. Batavian is a dialect of Malay spoken by the indigenous people of Jakarta (the capital city of Indonesia) and its surroundings; and Cilebut Batavian is one of its sub-dialects. Indonesian and Cilebut Batavian share abundant cognates; and this article analyzes the alternations of the Indonesian segments in Cilebut Batavian, i.e., the alternations which are found in the cognates. The contrastive analysis is based on the fact that Indonesian is closer to Standard Malay. The data corpus is the phonological forms of the cognates, i.e. certain words shared by Indonesian and Cilebut Batavian referring to the same referents and assumed to show alternations. The phonological forms of the Indonesian cognates are based on the grapheme-phoneme-correspondence rules in Indonesian; the phonological forms of the Cilebut Batavian cognates are based on the utterances of a single native-speaker. The alternations comprise (a) strengthening, weakening, fortition, lenition, glottalization, de-glottalization, nasalization, and de-nasalization of consonants, (b) laxing, centering, and diphthongization of vowels, (c) monophthongization of diphthongs/triphthongs (d) deletion, insertion, fusion, fission, haplology, and metathesis of segments/clusters, (e) assimilations and dissimilations, (f) reduplications and de-reduplications, and (g) word-shortening. The findings show certain phonotactics in Cilebut Batavian and the contrast between the distribution of the segments in both language codes.
How to cite: Syamsuar, F. (2026). Indonesian segment alternations in Cilebut Batavian Malay. <i>International Journal Linguistics of Sumatra and Malay (IJLSM)</i>, 5(1), 20-36.	Keywords: Cognates, Segment-alternations, Phonotactics
 This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International. http://doi.org/10.32734/ijlsm.v5i1.25102	

1. Introduction

Batavian is a dialect of Malay spoken in Java. It is spoken by the indigenous people of Jakarta (the capital city of the Republic of Indonesia) and certain areas becoming its satellites: Bekasi, Bogor, Depok, Karawang, and Tangerang, (Muhadjir, 2000, p. 69). Grijns (1991, p. xii) pointed out TENGAHAN ‘central’ versus PINGGIRAN ‘outskirt’ in explaining the distribution of the variations of Batavian Malay; so, the variations are generally dichotomized into Tengahan and Pinggiran. Tengahan is spoken in Jakarta while Pinggiran is spoken in Bekasi, Bogor, Depok, Tangerang, and Karawang.

Cilebut, a village located in the northern part of Bogor regency, was explained by Grijn (1991, p. 249) as a Batavian-speaking area. The high-register or the standard variation of Malay was reported to be used in the Islamic sermons by the speakers of CILEBUT BATAVIAN MALAY (hereinafter is referred to as Cilebut Batavian). The register was reported to be shifted to the local non-standard variation when the religious talks were shifted into the daily-matter ones.

Indonesian – derived from Standard Malay, i.e. Johor-Riau Malay (Abu Bakar, 2019) – and Cilebut Batavian share certain similarities. The similarities are shown by the cognates shared by the two language codes. The cognates show certain segment alternations; and this article analyses the alternations.

A COGNATE of a word in a language is a word in another language that has a similar form and is used with a similar meaning (Yule, 2010, p. 226). Each of the English words mother /mʌ.ðər/ and father /fɑ:.ðər/ is a cognate of each of the German words Mutter /mʊ.tʊ/ and Vater /fa:.tʊ/. Between each of them, there are segment correspondences, i.e. (1) the English vowel /ʌ/ corresponds to the German vowel /ʊ/, (2) the English

vowel /a/ corresponds to the German vowel /a/, (3) the English consonant /ð/ corresponds to the German consonant /t/, and (4) the English cluster /əʔ/ corresponds to the German vowel /ɐ/. The correspondences are known as segment alternations.

Referring to Syamsuar (2018) and Deterding, Gardiner, & Noorashid (2022), the following is the distribution of CONSONANTS in Indonesian and Malay.

Table 1. Consonants in Indonesian and Malay

of manners articulation	places of articulation								
	bilabial	labio- dental	dental	alveolar	post- alveolar	palatal	velar	uvular	glottal
plosive	p b			t d		C J	k g		q ʔ
nasal	m			n		ɲ	ŋ		
trill					r				ʎ
fricative		f v	θ ð	s z	ʃ			x	h
lateral				l					
approximant	w					j			

The consonants listed on the left of each column are fortis or produced with relatively stronger degree of muscular effort and with relatively stronger breath effort; the ones on the right are lenis or produced with relatively weaker degree of muscular effort and with relatively weaker breath effort (Crystal, 2008, p. 197). Referring to the universal scale of values on which segments are arrayed, consonants range from strong to weak: velars are weaker than dentals and dentals are weaker than bilabials (Crystal, 2008, p. 454). Matthews (1997, p. 354) pointed out that, based on the scale or hierarchy in which segments are distinguished as stronger or weaker, plosives are stronger than fricatives; fricatives are stronger than laterals and approximants.

Referring to Syamsuar (2018) and Deterding, Gardiner, & Noorashid (2022), the following is the distribution of VOWELS in Indonesian and Malay.

Table 2. Vowels in Indonesian and Malay

tongue position	front		central		back	
	tense	lax	tense	lax	tense	lax
high	i	ɪ			u	ʊ
mid	e	ɛ		ə	o	ɔ
low			a	ʌ		

Dealing with the part of the tongue involved in vowel production, there are front, central, and back vowels. Meanwhile, dealing with the height of the tongue, there are high, mid, and low vowels. The ones produced by tense tongue-posture are tense vowels; and the ones produced by lax tongue-posture are lax vowels.

Associated with approximants, there are glides. A GLIDE is a segment referring to a transitional segment produced when the vocal organs moved towards or away from a certain articulation (Crystal, 2008, p. 211). Segment /j/ occurring in the pronunciation of the English word /tʰu:n/ *tune* is a glide. A glide, occurring as onset and/or part of onset, is treated as a consonant. Related to the value scale, glides are weaker than approximants.

A DIPHTHONG or a TRIPHTHING is a single segment which is like the tense vowel. The similarity is due to the fact that the three types of segments are produced in longer durations (Yavaş, 2011, p. 106). A diphthong is a vowel which is followed by an approximant. The Indonesian diphthongs, at least, comprise /ej/ like in *survey* ‘survey’, /ʌj/ like in *pantai* ‘beach’, /ʌw/ like in *kerbau* ‘buffalo’, and /ɔj/ like in *sepoi* ‘breeze’. Kridalaksana (2008) pointed out the dichotomy of WIDE DIPHTHONG versus NARROW DIPHTHONG: the first is produced with wider changes of tongue movements like /ʌj/ or /ɔj/ compared to second like /ej/.

The English /Iə/, /eə/, and /uə/, which were categorized by Roach (2009) into centering diphthongs, were transcribed by Syamsuar (2025) as /Iʲə/, /eʲə/, and /uʷə/ and explained as single segments. Each segment consists of two vowels and a glide occurring between them. Since it consists of three elements, each segment – as well as the Minangkabau Malay segment like /Iʲʌ/ like in *kaciak* ‘small’ or /ʊʲI/ like in *turuik* ‘follow’ – is a triphthong.

A single consonant can become an onset or coda in a syllable. It is associated with the definition of SYLLABLE by Yavaş (2011, p. 20) as a phonological unit consisting of segments around the pivotal vowel

or vowel-like sound (diphthong or triphthong), which is known as NUCLEUS. An ONSET occurs as the initial segment while a CODA occurs as the final segment of a syllable.

A MONOSYLLABIC WORD consists of one syllable. A DISYLLABIC WORD consists of two syllables. A TRISYLLABIC WORD consists of three syllables. A POLYSYLLABIC WORD consists of more than three syllables. In a disyllabic word, there are the INITIAL SYLLABLE and the FINAL SYLLABLE. In a trisyllabic word, a PENULTIMATE occurs before the final syllable. In a polysyllabic word, an ANTEPENULTIMATE occurs before the penultimate and a PRE-ANTEPENULTIMATE occurs before the antepenultimate.

A syllable with a coda is a CLOSED SYLLABLE. The one without a coda (consisting of onset plus a vowel or a diphthong or a triphthong as its nucleus) is an OPEN SYLLABLE. In the phonological transcription of a word, the diacritic symbol /./ is used to separate a syllable from another.

2. Method

Eighty percent of the Indonesian elements are derived from the standard Malay (SIL 2006). Therefore, the analysis of alternations of Indonesian sounds in Cilebut Batavian as a sub-dialect of Batavian Malay becomes crucial. The comparative analysis and the description of Indonesian segment alternations in Cilebut Batavian is based on the fact that, compared to CBM, Indonesian is closer to the standard variation of Malay.

The data corpus for the analysis comprises the phonological forms of the cognates, i.e. the ones with alternations, shared by Indonesian and Cilebut Batavian. The phonological forms of the Indonesian words are based on the rules of Indonesian grapheme-phoneme correspondences proposed by Syamsuar (2015). The phonological forms of the Cilebut Batavian cognates are based on the utterances of a single informant.

The informant is an elderly widow with SR as the initials of her name. She was born in Cilebut, on 2nd May 1961. She is uneducated because she did not complete her primary education. She recently resides in Cilebut Lebak (sub-village), Cilebut Timur (village), Sukaraja (district), Bogor (regency), West Java (province), Indonesia; and she works as a house maid at the residence of the data-collector.

The data collecting was conducted by asking the informant to utter certain referents which were assumed to be the cognates with segment alternations. In other words, the Cilebut Batavian phonological forms of the referents were assumed to have different realizations compared to the Indonesian phonological forms. The daily note-taking as data-collecting was conducted casually at the residence of the writer of this article (as the data-collector) from 2000 until the end of 2005. Besides becoming the data corpus for this analysis, the result of the data collecting became part of the data corpus of the research conducted by Syamsuar & Priyoto (2025).

The cognates are recapitulated in several lists displayed in the following section. The first column of each list displays the numbering of the data. The second displays the phonological forms of the Indonesian cognates. The third displays the phonological forms of the Cilebut Batavian cognates. The segment alternations are shown by the bold-printed consonant, vowel, diphthong, triphthong, or cluster. The fourth displays the glossary of cognates; Latin is used for cognates referring to certain animals or plants. The last displays the number of cognates undergoing the same alternations and/or the ones having the same syllable structure. The entire cognates can be seen in the list of cognates shared by Indonesian and 34 dialects of Malay in Indonesia as the data corpus of the research conducted by Syamsuar & Priyoto (2025).

3. Result and Discussion

The following is the description of the alternations of the Indonesian segments or segment-clusters in Cilebut Batavian.

3.1 Alternations of a Single Consonant into another Single Consonant

The following lists show the alternations of a consonant into another consonant.

List 1. Alternations of a Fortis Consonant into Another Fortis Consonant

1	2	3	4	5
[1.1]	/p I . p I l /	/p ə . r I . t I l /	shell the corn	
[1.2]	/C I . j ʌ p /	/C I . j ʌ k /	chicken sound	
[1.3]	/r ʌ . ŋ u p /	/r ʌ . ŋ u ʔ /	tasty	
[1.4a]	/t o ŋ . k o l /	/p o ŋ . k o l /	lump	
[1.4b]	/m ə . m ʌ n . t u l /	/ŋ ʌ m . p u l /	bounce	
[1.5a]	/t ʌ . r I ŋ /	/C ʌ . l I ŋ /	canine tooth	1
[1.5b]	/k I . t I r /	/k I . C I r /	small propeller	
[1.6a]	/t ə r . b ʌ . k ʌ r /	/k ə . b ʌ . k ʌ r /	burnt	4
[1.6b]	/J ə . l ʌ . l ʌ . t ʌ n /	/b ə . l ʌ . l ʌ . k ʌ n /	look around insentiently	

[1.6c]	/sʌ.bʊt/	/sʌ.bʊk/	coconut fibre	
[1.7]	/tʊn.Jʊk/	/ʔʊn.Jʊk/	point out/direct	
[1.8]	/Cʌm.pʌk/	/tʌm.pʌk/	measles	
[1.9]	/kʊ.dʊk/	/pʊn.dʊk/	neck	
[1.10a]	/kə.pʌk	/tə.pʌk	wing	
[1.10b]	/Cə.gʊk/	/Cə.kʊt/	hiccup	
[1.11]	/kə.Cʊ.wa/	/Cə.Cʊ.rʊʔ/	cockroach	
[1.12a]	/kʌ.kɛʔ/	/ʔʌ.kɪʔ/	grandfather	
[1.12b]	/kə.bʌl/	/bʌ.ʔʌl/	immune	
[1.13]	/ʔə.rʌm/	/kə.rəʔm/	brood	
[1.14a]	/fʌ.sɪh/	/pʌ.sɛh/	fluent	11
[1.14b]	/fʊr.mʊ.lɪr/	/pʊ.mʊ.lɪr/	form	
[1.14c]	/fɪt.nʌh/	/pɪt.nʌh/	slander	2
[1.14d]	/tʌf.sɪr/	/tʌp.sɪr/	interpret	4
[1.14e]	/mʌn.fʌ.ʔʌt/	/mʌŋ.pʌ.ʔʌt/	advantage	4
[1.14f]	/ʔɛ.fɛk.tɪf/	/ʔɛ.pɛk.tɪp/	effective	
[1.14g]	/mʊ.sʌ.fɪr/	/mʊ.sʌ.pɪr/	traveller	13
[1.14h]	/mʌ.ʔʌf/	/mʌ.ʔʌp/	apology/pardon	8
[1.15]	/ʔʊ.sʊs/	/ʔʊ.Cʊs/	intestine	
[1.16a]	/sʊ.dʌh/	/ʔʊ.dʌh/	already/done	2
[1.16b]	/sʌm.pʌj/	/ʔʌm.pɛʔ/	arrive	
[1.17a]	/fʌ.rʌt/	/sʌ.rʌt/	requirement	9
[1.17b]	/fʌh.wʌt/	/sʌh.wʌt/	lust	1
[1.17c]	/mʌ.fʌ.rʌ.kʌt/	/mʌ.sʌ.rʌ.kʌt/	society	3
[1.17d]	/ʔɪ.fʌʔ/	/ʔɪ.sʌʔ/	evening-prayer time	2
[1.18a]	/xʊ.sʊs/	/kʊ.sʊs/	special	3
[1.18b]	/xʊt.bʌh/	/kʊt.bʌh/	sermon	
[1.18c]	/ʔɪ.xlʌs/	/ʔɪ.klʌs/	sincere	
[1.19a]	/xʌs/	/hʌs/	special	
[1.19b]	/xʌ.jʌl/	/hʌ.jʌl/	imagine	4
[1.19c]	/ʔɪx.tɪ.jʌr/	/ʔɪh.tɪ.jʌr/	effort	2
[1.19d]	/ʔʌ.xɪr/	/ʔʌ.hɪr/	end	3
[1.20]	/hʌ.pʊt/	/kʌ.pʊt/	float away	
[1.21a]	/hʌ.wʊs/	/ʔʌ.wʊs/	thirsty	17
[1.21b]	/hʌm.bʊr/	/ʔʌ.wʊr/	spread	
[1.21c]	/hʌn.Cʊr/	/ʔʌn.Cʊr/	crushed/smashed	3
[1.21d]	/Jə.lʌn.tʌh/	/Jə.lʌn.tʌʔ/	small remainder cooking oil	4

The cognates in [1.1], [1.2], [1.3], [1.5a–b], [1.6a–c], [1.7], [1.2a–b], & [1.19a–d] show WEAKENING, i.e. the alternation of stronger consonant into weaker consonant. Meanwhile, the ones in the rest of the data show STRENGTHENING, i.e. the alternation of weaker consonant into stronger consonant. The strengthening involves more alternations and more cognates. More onsets in more initial syllables undergo the alternations, both weakening and strengthening.

The cognates in [1.3], [1.12a–b], [1.16a–b], & [1.21a–d] undergo the alternation of a non-glottal-plosive into a glottal-plosive; the alternation is known as GLOTTALIZATION. The glottal-plosive is found to occur as onset in the initial syllable and the final syllable. In line with it, Deterding, Gardiner, & Noorashid (2022, p. 6) explained that glottal-plosive can occur as onset of the initial syllable of Malay words like in *angin* ‘wind’ /ʔʌ.ŋɪn/ and *saat* ‘time’ /sʌ.ʔʌt/.

List 2. Alternations of a Fortis Consonant into a Lenis Consonant

1	2	3	4	5
[2.1]	/kə.pʊl/	/kə.bʊl/	puff	
[2.2]	/tʊm.pʊl/	/mʊn.tʊl/	blunt/dull	
[2.3]	/kɛ.sɛt/	/kʊ.sɛ.dʌn/	sink away	
[2.4]	/Cə.gʌt/	/Jə.gʌt/	across/block	

[2.5a]	/kɪ.lɪr/	/gɪ.lɪr/	twisted/sprained	1
[2.5b]	/ʔɪ.kʌl/	/gʌ.lɪŋ/	curl	
[2.5c]	/bə.dʊk/	/bə.dʊg/	drum	
[2.6]	/gɔ.lɛk/	/gɔ.lɛr/	lie on the ground	
[2.7a]	/ʔɪ.kʌl/	/gʌ.lɪŋ/	curly	
[2.8b]	/rʌŋ.kʌʔ/	/rʌŋ.kʌŋ/	crawl	
[2.9]	/sən.tʌk/	/gən.tʌk/	jerk	
[2.10]	/mʌ.sɪh/	/mʌ.sɪŋ/	still	

Another type of weakening is LENITION or the alternation of a fortis consonant into a lenis consonant. The cognates in [2.1], [2.3], [2.4], & [2.5a–c] undergo lenition of plosives into plosives; in [2.2] & [2.7a–b] plosives into nasals; in [2.6], plosive into trill; in [2.8], fricative into plosive; in [2.9], fricative into nasal. Therefore, lenition mostly involves the alternations of plosives into plosives.

Lodge (2009, p. 29) pointed out NASALIZATION as a type of lenition. The lenition of plosives into nasals belongs to nasalization. Marotta (2015, p. 257) reported that, in Tuscan, velars undergo much more lenition than dentals and labials. Similarly, more cognates recapitulated above undergo velar lenition. The lenition occurs more in the final syllables. The lenition occurs more as onset. In [2.2], [2.5a–c], & [2.7a], the onset is metathesized.

List 3. Alternations of a Lenis Consonant into a Fortis Consonant

1	2	3	4	5
[3.1a]	/bʊŋ.kʌl/	/pʊŋ.kʌl/	hunk	
[3.1b]	/gəm.bʊr/	/gəm.pʊr/	loose/crumblly	
[3.2]	/bər.tə.mu/	/kə.tə.mʊʔ/	meet up	
[3.3]	/gə.də.bʊŋ/	/kə.tə.bʊŋ/	banana trunk	
[3.4a]	/gə.lɪ.tɪk/	/kɪ.tɪk/	tickle	1
[3.4b]	/Cə.gʊk/	/Cə.kʊt/	hiccup	
[3.5a]	/gə.nʌŋ/	/ʔəm.bəŋ/	stagnant water	
[3.5b]	/gən.Jʊt/	/ʔən.Jʊt/	cycle/see-saw	
[3.6a]	/gɔr.dɛn/	/hɔr.dɛŋ/	curtain	
[3.6b]	/tɛ.gəl/	/tɛ.həl/	tile	
[3.7]	/mɛ.mʌŋ/	/ʔɛ.mʌŋ/	obviously	
[3.8]	/ʔʊ.lʌr/	/ʔʊ.lʌʔ/	snake	
[3.9]	/ʔɪ.Jʌ.zʌh/	/ʔɪ.Jʌ.sʌh/	certificate/diploma	
[3.10]	/pɪ.jɪk/	/pɪ.tɪk/	baby bird/chick	

Another type of strengthening is FORTITION or the alternation of a lenis consonant into a fortis consonant. The cognates in [3.1a–b], [3.2], [3.3], [3.4a–b], & [3.5a–b] undergo fortition of plosives into plosives; in [3.6a–b], plosive into fricative; in [3.7], nasal into plosive; in [3.8], trill into plosive; in [3.9], fricative into fricative; and in 1.2.1.14.2, approximant into plosive. Like lenition, fortition mostly involves the alternations of plosives into plosives. Fortition mostly occurs in the initial syllables. Most fortitions involve onsets occurring more in the initial syllable.

List 4. Alternations of a Lenis Consonant into another Lenis Consonant

1	2	3	4	5
[4.1]	/bʌn.dʊl/	/gʌn.dɪ.lʌn/	pendant	
[4.2]	/hʌm.bʊr/	/ʔʌ.ʷʊr/	spread	
[4.3]	/tɪ.dʌʔ/	/kʌ.gʌʔ/	no/not	
		/ʔəŋ.gʌʔ/		
[4.4]	/Jɛ.lʌ.lʌ.tʌn/	/bɛ.lʌ.lʌ.kʌn/	look around insentiently	
[4.5]	/ʔɪ.Jʊk/	/dʊk/	palm fibre	
[4.6]	/gɔ.dʌm/	/bɔ.dəp/	cudgel	
[4.7a]	/mʌʔ/	/pʌʔ/	mother	
[4.7b]	/ʔə.mʌʔ/	/ʔə.pʌʔ/	mother	
[4.8a]	/mə.lʌ.mʊn/	/ŋə.lʌ.mʊn/	step	
[4.8b]	/mɪm.pɪ:/	/ŋɪm.pɪʔ/	dream	
[4.8c]	/bʌm.bʊ:/	/bʌŋ.bʊʔ/	bamboo	4

[4.8d]	/b ə .l I m .b I ŋ /	/b ə .l I ŋ .b I ŋ /	star fruit	1
[4.9]	/ʔ I n .f u s /	/ʔ I m .p u s /	infusion	1
[4.10a]	/r ʌ n .s u m /	/r ʌ ŋ .s u m /	ration	13
[4.10b]	/m ə .m ʌ n .t u l /	/ŋ ʌ m .p u l /	bounce	
[4.10c]	/k ə .d ə n .d ə ŋ /	/k ə .d ə ŋ .d ə ŋ /	<i>Sapindales dulcis</i>	
[4.10d]	/g ə r .d ε n /	/h ə r .d ε ŋ /	curtain	
[4.11a]	/r ε s .t ə .r ʌ n /	/l ε s .t ə .r ʌ n /	restaurant	
[4.11b]	/p r ə .g r ʌ m /	/p l ə .g r ʌ m /	program	
[4.11c]	/k ʌ r .b u .r ʌ .t ə r /	/k ʌ .b I .l ʌ .t ə r /	carburettor	
[4.11d]	/t ʌ .r I ŋ /	/C ʌ .l I ŋ /	canine tooth	
[4.11e]	/s ə r .t I r /	/s ə r .t I l /	sort	
[4.12]	/t ʌ ʔ .z I .j ʌ h /	/p u .d I .j ʌ h /	sympathy	
[4.13a]	/z ʌ t /	/J ʌ t /	essence	
[4.13b]	/z ʌ .m ʌ n /	/J ʌ .m ʌ n /	era	5
[4.13c]	/z ʌ m .r u t /	/J ʌ m .r u t /	emerald	1
[4.13d]	/r ə .z ə .k i : /	/r ə .J ə .k I ʔ /	sustenance	
[4.13e]	/z ʌ m .z ʌ m /	/J ʌ m .J ʌ m /	holy well in Mecca	
[4.13f]	/n ʌ .z ʌ r /	/n ʌ .J ʌ r /	vow	10
[4.14a]	/l ə .r ə t /	/r ə .r ə d /	sink away	
[4.14b]	/k ə .l ʌ .r ʌ s /	/k ə .r ʌ .r ʌ s /	dried leaves	
[4.15a]	/j ʌ ŋ /	/p ʌ ŋ /	that/which	
[4.15b]	/b I .j ʌ .w ʌ k /	/b I .p ʌ .w ʌ k /	monitor lizard	
[4.16]	/k ə .p I .j ʌ h /	/k ə .p ʲ ʌ h /	skull-cap	

The cognates in [4.1], [4.2], [4.3], [4.7a–b], [4.8a–c], [4.10a–d], [4.11a–e], & [4.16] show weakening; the ones in the rest of the data show strengthening. The alternations involve more weakening. It is contrasted with the alternations of a fortis into another fortis which involve more strengthening.

Weakening occurs more in the initial syllables and involves more codas. The coda in the penultimate is metathetically altered into the onset in the initial syllable in [4.10b]. Strengthening occurs in various positions but only involves onsets. Onset in the penultimate is metathesized into the onset in a monosyllabic word in [4.5]. Like what are found in the alternations of a fortis into another fortis, the alternations of a lenis consonant into another lenis consonant, both weakening and strengthening, mostly occur in the initial syllables; and more onsets are involved.

The alternation in [1.19a–d] is associated with the notion of FRICATIVE-WEAKENING. It was explained by Solé (2010) as the alternation that mostly occurs in the final syllable. However, the cognate in [1.19a] shows fricative-weakening of the onset in a monosyllabic cognate; the ones in [1.19b–c] show fricative-weakening in the initial syllables (as onset in [1.19b] and as the coda in [1.19c]); and the one in [1.19d] shows fricative-weakening of onset in the final syllable.

In [4.16], an approximant is weakened into a glide. It is associated with GLIDING, a notion explained by Solé (2010) as a type of weakening. In contrast, Millar (2015, p. 59) pointed out the notion of GLIDE-STRENGTHENING; but no cognate undergoes the alternation. Instead, APPROXIMANT-STRENGTHENING, similar to GLIDE-STRENGTHENING, is found in [3.10] and [4.15a–b]. The cognate in [3.10] undergoes a fortition of approximant into plosive; and the ones in [4.15a–b] undergo approximant-strengthening into nasal.

In [4.8a], a bilabial-nasal becomes the initial sound of the Indonesian prefix; and it is altered in Cilebut Batavian; so, the cognate undergoes prefix alternation. Meanwhile, in [4.8–d], the occurrence of the Indonesian bilabial-nasal as coda is influenced by the occurrence of bilabial-plosive as onset in the following syllable; so, the Indonesian cognates undergo assimilation. The bilabial-nasal is altered into velar-nasal; so, instead of undergoing ASSIMILATION, the Cilebut Batavian cognates undergo DISSIMILATION.

3.2 Alternations of a Vowel or Diphthong or Triphthong into another Segment

The following lists show the alternations of a vowel or vowel-like segment into another segment.

List 5. Alternations of a Tense Vowel or Diphthong or Triphthong

1	2	3	4	5
[5.1]	/k ə .r i .b o : /	/k ə .r i .b ə w /	curly	

[5.2a]	/li.ma:/	/lɪ.mʌʔ/	five	76
[5.2b]	/pri.ba.di:/	/prɪ.bʌ.dɪʔ/	personal	
[5.2c]	/mu.ti.ja.ra:/	/mʊ.tɪ.jʌ.rʌʔ/	pearl	9
[5.2d]	/di.ni.ha.ri:/	/dɪ.nɪ.hʌ.rɪʔ/	early morning	1
[5.2e]	/mu.ti.ja.ra:/	/mʊ.tɪ.jʌ.rʌʔ/	pearl	7
[5.2f]	/pa.ri.wi.sa.ta:/	/pʌ.rɪ.wɪ.sʌ.tʌʔ/	tourism	1
[5.2g]	/pa.ni.ti.ja:/	/pʌ.nɪ.tɪ.jʌʔ/	committee	
[5.2h]	/kə.bi.ri:/	/kə.bɪ.rɪʔ/	castrated	48
[5.2i]	/sə.tə.ri.ka:/	/sə.trɪ.kʌʔ/	flatiron	1
[5.3a]	/ti.ri:/	/tɛ.rɛʔ/	step (kinship)	2
[5.3b]	/fa.ni.li:/	/pʌ.nɛ.lɪʔ/	<i>Vanilla planifolia</i>	
[5.4]	/ri.si.ko:/	/rə.sɪ.kʊʔ/	risk	
[5.5]	/bi.sa:/	/bʊ.sʌh/	snake poison	
[5.6]	/ʔi.tu:/	/ʔɔ.nʊh/	that	
[5.7]	/te.jo.ri:/	/tɪ.jʊ.rɪʔ/	theory	
[5.8a]	/de.wa.sa:/	/dɛ.wʌ.sʌʔ/	adult	29
[5.8b]	/ku.we.ni:/	/kʊ.wɛ.nɪʔ/	<i>Mangifera odorata</i>	23
[5.9]	/te.le.fi.si:/	/tə.lə.pɪ.sɪʔ/	television	
[5.10a]	/ra.bu:/	/rə.bʊʔ/	Wednesday	2
[5.10b]	/sə.ma.di:/	/sə.mə.dɪʔ/	meditation	
[5.11a]	/na.xo.da:/	/nʌ.kʊ.dʌʔ/	admiral	206
[5.11b]	/pra.mu.ka:/	/prʌ.mʊ.kʌʔ/	scout	
[5.11c]	/ta.di:/	/sə.tʌ.dɪʔ/	just before	
[5.11d]	/ba.ha.gi.ja:/	/bʌ.hʌ.gɪ.jʌʔ/	happy	12
[5.11e]	/su.ka.re.la:/	/sʊ.kʌ.rɛ.lʌʔ/	volunteer	
[5.11f]	/pa.ri.wi.sa.ta:/	/pʌ.rɪ.wɪ.sʌ.tʌʔ/	tourism	7
[5.11g]	/ma.ta.ha.ri:/	/mʌ.tʌ.hʌ.rɪʔ/	sun	4
[5.11h]	/ma.la.pə.ta.ka:/	/mʌ.lʌ.pə.tʌ.kʌʔ/	disaster/misfortune	1
[5.11i]	/gan.da.ri.ja:/	/gʌn.dʌ.rɪ.jʌʔ/	<i>Bouea macrophylla</i>	
[5.11j]	/pə.ri.ba.ha.sa:/	/pə.rɪ.bʌ.hʌ.sʌʔ/	proverb	10
[5.11k]	/bə.la.lʌj/	/lʌ.lɛʔ/	elephant trunk	3
[5.11l]	/ʔʌn.ta.ra:/	/ʔʌn.tʌ.rʌʔ/	between	206
[5.11m]	/ʔo.pə.ra.si:/	/ʔɔ.prʌ.sɪʔ/	operation	4
[5.12]	/sa.na:/	/sɔ.nʊh/	there	
[5.13a]	/tu.wa:/	/tʊ.wʌʔ/	old	119
[5.13b]	/sa.nu.ba.ri:/	/sʌ.nʊ.bʌ.rɪʔ/	heart-strings	8
[5.13c]	/məŋ.ku.du:/	/məŋ.kʊ.dʊʔ/	<i>Morinda citrifolia</i>	40
[5.14a]	/do.ʔa/	/dʊ.ʔʌʔ/	prayer/wish	43
[5.14b]	/ʔe.ko.no.mi:/	/ʔɛ.kʊ.nʊ.mɪʔ/	economy	
[5.14c]	/mʌh.ko.ta:/	/mʌh.kʊ.tʌʔ/	crown	15
[5.14d]	/səm.brɔ.no:/	/səm.brʊ.nʊʔ/	indecent	1
[5.15]	/lʌm.pʌw/	/lʌm.pʊw/	pass; past	3
[5.16]	/ʔa.tʌw/	/ʔʌ.tʌ.wʌʔ/	or	
[5.17]	/sʌw.dʌ.gʌr/	/sɔ.dʌ.gʌr/	merchant	1
[5.18]	/ba.gʌj.ma.na:/	/gɪ.mʌ.nʌh/	how	1
[5.19]	/hʌʝɪt/	/hɛt/	menstruation	1

In [5.1], a vowel is altered into a diphthong. Therefore, the cognate undergoes DIPHTHONGIZATION. In [5.2]–[5.14], a tense vowel is altered into a lax vowel; abundant cognates undergo vowel laxing and it involves more alternations of a low-central-tense vowel into a lax vowel. In [5.15] a wide diphthong is altered into a narrow one. In [5.16], [5.17], & [5.18], a diphthong is altered into a vowel; in [5.19], a triphthong is altered into a vowel. Therefore, the cognates with the two last-mentioned alternations undergo MONOPHTHONGIZATION.

List 6. Alternation of a Lax Vowel

1	2	3	4	5
[6.1a]	/pɪl/	/pɛl/	pill	1
[6.1b]	/kɪ.dəl/	/kɛ.bɔt/	left-handed	
[6.1c]	/pɪs.tɔl/	/pɛs.tɔl/	pistol	
[6.1d]	/gɪ.lɪŋ/	/gɛ.lɛŋ/	grind	
[6.1e]	/nɪ.sɪ.hət/	/nɛ.sɛ.hət/	advice	3
[6.1f]	/pə.rɪk.sɑ:/	/pə.rɛk.sɔʔ/	check	3
[6.1g]	/ʔɪ.ʲɪr/	/ʔɛ.ʲɛr/	water	24
[6.1h]	/tɪ.blɪk/	/tɛ.blɛk/	sermon	
[6.2]	/tɛ.nɪs/	/tɛ.nəs/	tennis	
[6.3]	/tɪ.tɪh/	/tɛ.tɛh/	limp	
[6.4a]	/Cɛ.tɪk/	/Cɪ.tɪk/	print	
[6.4b]	/pɛn.sɪl/	/pɪn.sɪl/	pencil	
[6.4c]	/krɛ.dɪt/	/kə.rɪ.dɪt/	credit	
[6.4d]	/kɪ.kɛʔ/	/ʔɪ.kɪʔ/	grandfather	
[6.5a]	/sɛ.krə.tɪ.rɪs/	/sə.kə.tɪ.rɪs/	secretary	
[6.5b]	/tɛ.lɛ.pən/	/təl.pən/	telephone	
[6.5c]	/pɛn.sɪ.jʊn/	/pən.sɪ.jʊn/	pension	
[6.5d]	/prɛ.sɪ.dɛn/	/prə.sɪ.dɛn/	president	
[6.6]	/tɛ.tɛs/	/tʊ.tʊh/	drip/drop	
[6.7]	/sɛ.lə.kɪn/	/sɔ.lə.kɪn/	gutter/ditch	1
[6.8]	/Jə.rət/	/Jɪ.rət/	halter/knot	1
[6.9a]	/pə.gɪŋ/	/pɛ.gɪŋ/	hold	1
[6.9b]	/pən.tɪs/	/pɛn.tɪs/	stage	1
[6.10a]	/wə.dɑ.nɑ:/	/wɪ.dɪ.nɔʔ/	officer	
[6.10b]	/bən.dɑ:/	/bɪn.dɔʔ/	treasure	
[6.11a]	/gə.rɪn.dɑ:/	/gʊ.rɪn.dɔʔ/	grindstone	
[6.11b]	/pʌr.tɪ.kə.lɪr/	/pʌr.tɪ.kʊ.lɪr/	private	
[6.12a]	/rə.bɑ.nɑ:/	/rɔ.bɪ.nɔʔ/	tambourine	2
[6.12b]	/də.gɪn/	/gə.dʊ.gɪn/	half-ripe coconut	1
[6.13a]	/kə.rɪn.jɪŋ/	/rɪn.jɪŋ/	basket	
[6.13b]	/mɪ.jɪt/	/mɪ.jɪt/	corpse	
[6.14a]	/Cɪt/	/Cɛt/	paint	
[6.14b]	/lɪŋ.kɪh/	/lɛŋ.kɪh/	step	
[6.14c]	/kɪ.lɪh/	/kɛ.lɛh/	conquered	
[6.14d]	/lɪ.sɔʔ/	/rɛ.sɛʔ/	restless	
[6.15a]	/Jɪm/	/Jəm/	hour/time	
[6.15b]	/kɪ.sɪ.jɪn/	/kə.sɪ.jɪn/	compassionated	5
[6.15c]	/ʔɪm.bɪl/	/ʔəm.bɪt/	take	3
[6.15d]	/rɪ.Jɪp/	/rə.Jəp/	seventh Hijriya month	
[6.15e]	/ʔɪl.mɪ.nɪk/	/ʔɪl.mə.nɪk/	calendar	1
[6.15f]	/pɪn.Jɪm/	/pɪn.Jəm/	borrow/lend	195
[6.15g]	/Cəŋ.krɪm/	/Cəŋ.krəm/	seize	1
[6.16]	/gə.lə.gər/	/gə.lə.gʊr/	roar/boom	
[6.17a]	/rɪ.kɪ.ʔɪt/	/rɔ.kɪ.ʔɪt/	rakaat/bow	9
[6.17b]	/rɪh.mɪt/	/rɔh.mɪt/	mercy	2
[6.17c]	/rɪ.mɪ.dɪn/	/rɔ.mɪ.dɔn/	Ramadan	
[6.17d]	/ʔɪ.rɪ.dɪt/	/ʔɪ.rɔ.dɪt/	God's will	
[6.17e]	/mʊ.dɪ.rɪt/	/mʊ.dʊ.rɔt/	disadvantage	
[6.18]	/bɪn.dʊl/	/gɪn.dɪ.lɪn/	pendant	
[6.19a]	/bʊs/	/bəs/	bus	
[6.19b]	/trʊk/	/trək/	truck	1
[6.19c]	/tʊ.ŋɪw/	/tə.ŋʊʔ/	red louse	
[6.19d]	/rə.mʊk/	/rə.mək/	crushed/smashed	
[6.20a]	/kʊ.wɪs/	/kə.wɪs/	hole/cavity	1
[6.20b]	/kʊr.sɪ:/	/kə.r.sɪʔ/	camel	5

[6.20c]	/k ɒ . l ɒ m /	/k ɔ . l ɔ m /	hold something in mouth	2
[6.20d]	/l ə ŋ . k ɒ . w ʌ s /	/l ə ŋ . k ɔ . w ʌ s /	<i>Alpinia galanga</i>	1
[6.20e]	/k ɔ . r ɒ p . s i : /	/k ɔ . r ɔ p . s I ʔ /	corruption	1
[6.20f]	/d ʌ . w ɒ n /	/d ʌ . w ɔ n /	leaf	16
[6.21a]	/s ɔ . r ʌ k /	/s ɒ . r ʌ k /	cheer/rejoice	
[6.21b]	/t ɔ ŋ . k ʌ t /	/t ɒ ŋ . k ʌ t /	stick/support	5
[6.21c]	/p ɔ . h ɔ n /	/p ɒ . h ɒ n /	tree	1
[6.21d]	/s I m . b ɔ l /	/s I m . b ɒ l /	symbol	

The cognates undergo the alternations of a lax vowel into another lax vowel. A lax vowel occurring in the final syllables was reported by Fischer (in Watson 2002, p. 56) to be found in many dialects of Arabic. The front-high tense occurring in the final syllable of *katabti* ‘you wrote’ is often reduced into mid-central lax (schwa). Similarly, each Cilebut Batavian cognate in [6.2], [6.4a–d], [6.15a–g], & [6.19a–d] contains schwa as the alternation of an Indonesian lax vowel, mostly involving the nucleus of the final syllables. The alternation of a vowel into schwa is known as VOWEL CENTERING (Halm & Slater, 2018); the alternation turns out to dominate the occurrence of a lax vowel in the closed final syllables of the Cilebut Batavian cognates.

List 5 & List 6 show the domination of lax vowels in the Cilebut Batavian cognates. Tense vowels occur only in the initial syllables of few identical cognates (Syamsuar & Priyoto, 2025). Each cognate contains a diphthong as nucleus of the final syllables like in /li.hʌj/ ‘shrewd’, /le.tɔj/ ‘powerless’, /Ca.pʌj/ ‘approach/achieve’, /tu.pʌj/ ‘squirrel’, and /so.tɔj/ ‘smart ass’. The occurrence of a tense vowel in the initial syllable is influenced by the diphthong, which is also a tense segment, occurring in the final syllable; so, the cognates undergo assimilation.

3.3 Alternations of a Single Segment into a Cluster and vice versa

The following list shows alternations of a single segment into a cluster and vice versa.

List 7. Alternations of a Single Segment into a Cluster and vice versa

1	2	3	4	5
[7.1]	/krɪs.tən/	/kə.rəs.tən/	Christian	
[7.2]	/məŋ.Cəlɒp/	/pəlɒp/	dip/immerse	
[7.3]	/sə.pə.rəm.pʌt/	/sə.prʌ.pʌt/	a quarter	
[7.4]	/pə.hə.la:/	/pəh.lʌʔ/	merit	
[7.5a]	/gəlɪ.jʌt/	/ŋɒ.lɛt/	stretch	2
[7.5b]	/mə.wɒlɒt/	/mɒ.lɒt/	birthday of Prophet Muhammad	

The notion of FISSION was explained by Crystal (2008, p. 191) as a process in which a segment is split into two. The cognate in [7.1] shows fission. A single vowel is split into two schwa-s which are separated by a consonant.

The alternation of a cluster is merged into a single segment, undergone by each of the cognates in [7.1], is FUSION. It is in line with what was explained by Millar (2015, p. 56) that when the English word *tissue* /tɪs.ju:/ is altered into /ti:.fju:/, fusion happens. In [7.2], a consonant cluster is merged into a single consonant; in [7.3], a cluster of a vowel plus a consonant is merged into a vowel; in [7.4], a vowel cluster is merged into a vowel; and in [7.5a–b], a cluster of a vowel plus consonant plus vowel is merged into a vowel.

3.4 Alternations of a Cluster into Another Cluster

The following list shows the alternations of a cluster into another cluster.

List 8. Alternations of a Cluster into another Cluster

1	2	3	4	5
[8.1]	/ʔa.Ci:/	/kʌ.CIʔ/	valid	1
[8.2a]	/fi.di.jo/	/pɪ.dɪ.jɔʔ/	video	
[8.2b]	/te.le.fi.si:/	/tə.lə.pɪ.sɪʔ/	television	
[8.3]	/fe.bru.wa.ri:/	/pə.bʊ.wʌ.rɪʔ/	February	
[8.4]	/fa.ni.li:/	/pʌ.nɛ.lɪʔ/	<i>Vanilla planifolia</i>	1

[8.5]	/f o .t o :/	/p ɔ .t ɔ ɔ /	photo	
[8.6]	/s a .J a :/	/ʔ a .J a h/	only	3
[8.7]	/n a .x o .d a :/	/n a .k ɔ .d a ɔ /	admiral	1
[8.8]	/h i .J a w/	/ʔ i .J ɔ ɔ /	green	
[8.9]	/h a .t i :/	/ʔ a .t i ɔ /	heart/ liver/ mind	1
[8.10]	/t i .d a ɔ /	/k a .g a ɔ /	no/not	
[8.11]	/C i .b i r/	/J ə .b ɛ r/	mock	
[8.12]	/ʔ a .k i .k a h/	/ʔ ɛ .k a h/	aqeeqah	
[8.13]	/ʔ i .ŋ i n/	/p ɛ .ŋ ɛ n/	will/want	
[8.14]	/ʔ ɔ .s i l/	/r ɛ .s ɛ h/	nosy	
[8.15]	/f i .l ə m/	/p ɛ .l ə m/	film	
[8.16]	/t i .f ɔ s/	/t i .p ə s/	typhus	
[8.17]	/ʔ a .x i .r a t/	/ʔ a .h ɛ .r a t/	hereafter	
[8.18]	/x a .t i p/	/h ɔ .t i p/	preacher	
[8.19a]	/z i .n a :/	/J i .n a h/	adultery	
[8.19b]	/r a .z i .j a :/	/r a .J i .j a ɔ /	raid	
[8.20]	/b ə .l i .k a t/	/ʔ ɔ .l i .k a t/	shoulder blade	
[8.21]	/m b a ɔ /	/m p ɔ ɔ /	addressing for woman	
[8.22]	/k ə .s ə .d a k/	/k ə .s ə .l ə k/	choke	
[8.23]	/ʔ ə .J a n/	/ʔ ə .d ə n/	strain during child-birth	
[8.24]	/g ə .l i .j a t/	/ŋ ɔ .l i .k a t/	stretch	
[8.25]	/k ɔ .m a l/	/k ɔ .C ə l/	dirty	
[8.26]	/g ə .n a ŋ/	/ʔ ə m .b ə ŋ/	stagnant water	
[8.27]	/z a .l i m/	/J ɔ .l i m/	tyrant	
[8.28]	/z ɔ .h ɔ r/	/J ɔ .h ɔ r/	midday-prayer time	
[8.29]	/b ə .l ɛ .r a ŋ/	/ʔ ɔ .r i .r a ŋ/	sulphury	1
[8.30]	/l a .s a ɔ /	/r ɛ .s ɛ ɔ /	restless	
[8.31]	/p ə .l ɔ .w i t/	/p ə .r i .w i t/	whistle	
[8.32]	/w a .h a j/	/ʔ ɔ j/	oh/alas	
[8.33]	/ʔ a .d i k/	/ʔ a .d ɛ ɔ /	younger brother/sister	1
[8.34]	/b a .l i x/	/b a .l ɛ ɔ /	puberty	
[8.35]	/t ɛ .t ɛ s/	/t ɔ .t ɔ h/	drip/drop	
[8.36]	/J i ŋ .k a t/	/J i ŋ .k ɛ ɔ /	walk on tip toe	
[8.37]	/l a .l a t/	/l a .l ə r/	fly (animal)	1
[8.38]	/p ə .r a h/	/p ə .r ə s/	milk the cow/goat	
[8.39]	/p a .r ɔ h/	/p a .r ɔ ɔ /	half	1
[8.40]	/p i .C i ŋ/	/p i .C ə ɔ /	close one's eyes	
[8.41]	/b ɔ r .d i r/	/b ɔ r .d ɛ l/	embroidery	
[8.42a]	/ʔ ɔ .s i l/	/r ɛ .s ɛ h/	nosy	
[8.42b]	/ʔ a m .b i l/	/ʔ ə m .b a t/	take	
[8.43]	/p ɛ n .s i .j ɔ n/	/p ə ŋ .s i .j ɔ n/	pension	
[8.44]	/g ə .d ɔ ŋ/	/g ə .d ɛ ɔ /	big	
[8.45]	/t i .d a ɔ /	/ʔ ə ŋ .g a ɔ /	no/not	
[8.46]	/l i n .d u :/	/l i .n i ɔ /	earthquake	
[8.47]	/t i .f i :/	/t i .p i ɔ /	television	
[8.48]	/b ə r .k ə .l a .h i :/	/b ə r .k ə .l a .j i ɔ /	fight/quarrel	
[8.49]	/t a ɔ .z i .j a h/	/p ɔ .d i .j a h/	sympathy	
[8.50]	/m ə m .b a .l a s/	/ŋ ə .b a .l a s/	reply	
[8.51]	/C a n .t i k/	/C a .k ə p/	charming	
[8.52]	/k ɔ m .b a ŋ/	/g ɔ ŋ .g ɔ ɔ /	bumble-bee	
[8.53]	/k ɔ m .b a ŋ/	/g ɔ ŋ .g ɔ ɔ /	bumble-bee	
[8.54]	/k i .d a l/	/k ɛ .b ɔ t/	left/left-handed	
[8.55]	/k ə .l ɛ .r ɛ ŋ/	/k ə .l ɛ .C i ɔ /	marble	
[8.56]	/m ə .r a .C a w/	/ŋ a .C ɔ ɔ /	raving	

The cognates in [8.1]–[8.9] show the alternations of a cluster of a fortis consonant plus a tense vowel; in [8.10]–[8.18], a cluster of a fortis consonant plus a lax vowel; in [8.19a-b], a cluster of a lenis consonant plus

a tense vowel; in [3.20]–[8.31], a cluster of a lenis consonant plus a lax vowel; in [8.32], a cluster of a fortis consonant plus a diphthong; in [8.33]–[8.39], a cluster of a lax vowel plus a fortis consonant; in [8.40]–[8.44], a cluster a lax vowel plus a lenis consonant. Each cluster of two segments is altered into another cluster of two segments. Meanwhile, the cognate in [8.45] shows the alternation of a fortis consonant plus a lax vowel; and the cluster is altered into another cluster consisting of three segments.

The cognate in [8.46] shows the alternation of a cluster of a lenis consonant plus a tense vowel followed by length. The cluster is altered into another cluster consisting of two segments. The cognates in [8.47]–[8.48] show the alternations of a cluster of a fortis consonant plus a tense vowel followed by length. The cluster is altered into another cluster consisting of three segments.

The cognates in [8.49]–[8.50] show the alternation of a cluster, consisting of three segments, into a cluster consisting of two segments. The ones in [8.51]–[8.55] show the alternations of a cluster, consisting of three segments, into another cluster also consisting of three segments. The one in [8.56] shows the alternation of a cluster, consisting of four segments, into a cluster consisting of two segments.

3.5 Segment Insertions

The list below shows the segment insertions in the Cilebut Batavian cognates.

List 9. Insertions of a Single Segment or a Cluster

1	2	3	4	5
[9.1]	/rə.bʌk/	/sər.bʌk/	spread	
[9.2]	/pʊ.nʊk/	/pʊn.dʊk/	neck	1
[9.3]	/gə.nʌŋ/	/ʔə m .bəŋ/	stagnant water	
[9.4]	/kʊ.CIr/	/kʊ n .CIr/	pigtails	1
[9.5]	/ʔI.sʌk/	/ʔI ŋ .sək/	sob	
[9.6]	/ʔʌk.tə:/	/ʔʌk.təʔ/	certificate	5
[9.7]	/tʌn.tə:/	/tʌn.tə h /	aunt	
[9.8]	/ba.la:/	/bʌ h .lʌʔ/	disaster	
[9.9]	/ma.ka:/	/mʌ ŋ .kʌʔ/	consequently	1
[9.10]	/sə.prɛj/	/sə.prɛʔ/	bed sheet	
[9.11]	/tʊ.ŋʌw/	/tə.ŋʊʔ/	red louse	
[9.12]	/tə m .ba.kʌw/	/tə m .bʌ.kʊʔ/	tobacco	12
[9.13]	/ta.pʌj/	/tʌ.pɛʔ/	fermented rice/cassava	25
[9.14]	/sə.rʌj/	/sə.rɛ h /	<i>Andropogon nardus</i>	
[9.15a]	/si:/	/sIʔ/	the	1
[9.15b]	/sə.ko.Ci:/	/sə.kʊ.CIʔ/	lifeboat	277
[9.15c]	/mən.tə.ri:/	/mən.trIʔ/	minister	
[9.15d]	/ʔIs.tri:/	/ʔIs.trIʔ/	wife	4
[9.16a]	/mi/	/ʔə.mI h /	noodle	
[9.16b]	/pə.ni.ti:/	/pə.nI.tI h /	safety pin	12
[9.17a]	/ti.ri:/	/tɛ.rɛʔ/	step (kinship)	
[9.17b]	/kən.de:/	/kən.dɛʔ/	hair do	19
[9.17c]	/lo.tre:/	/lʊ.trɛʔ/	lottery	
[9.18]	/ku.we:/	/kʊ.wɛ h /	cake/gateau	2
[9.19a]	/ja:/	/ʔI.jʌʔ/	yes	
[9.19b]	/kə.la.pa:/	/kə.lʌ.pʌʔ/	coconut	452
[9.19c]	/sʌn.də.ra:/	/sʌn.drʌʔ/	hostage	2
[9.19d]	/mʌn.trʌ:/	/mʌn.trʌʔ/	magic spell	4
[9.20]	/bə.ra.pa:/	/bə.rʌ.pʌ h /	how many/how much	22
[9.21a]	/məŋ.ku.du:/	/məŋ.kʊ.dʊʔ/	<i>Morinda citrifolia</i>	169
[9.21b]	/Jʊs.tə.ru:/	/Jʊs.trʊʔ/	instead	
[9.21c]	/bə.lu.dru:/	/bə.lʊ.drʊʔ/	velvet	
[9.21d]	/ʔa.jo:/	/jʊʔ/	come on	
[9.22a]	/lu:/	/ʔə.lʊ h /	you	
[9.22b]	/du.ku:/	/dʊ.kʊ h /	<i>Lansium domesticum</i>	9
[9.23a]	/ra.bu:/	/rʌ.bʊʔ/	Wednesday	
[9.23b]	/sa.do:/	/sʌ.dʊʔ/	horse carriage	41
[9.24]	/sa.na:/	/sʊ.nʊ h /	there	1

[9.25]	/C u . m a : /	/C ʊ . m ʌ n /	only	
[9.26]	/s r i . k a . j a : /	/s ə . r I . k ʌ . j ʌ ʔ /	<i>Annona squamosa</i>	7
[9.27]	/t ʌ . J w I t /	/t ʌ . J ʊ . w I t /	correct way of reciting Quran	
[9.28]	/t ʌ . r ʊ p /	/t ə . t ʌ . r ʊ p /	temporary shed	
[9.29]	/j a : /	/ʔ I . j ʌ ʔ /	yes	
[9.30]	/m i : /	/ʔ ə . m I h /	noodle	2
[9.31]	/t a . d i /	/s ə . t ʌ . d I ʔ /	just before	
[9.32]	/j a : /	/h ə . ʔ ə h /	yes	
[9.33]	/d ə . g ʌ n /	/g ə . d ʊ . g ʌ n /	half-ripe coconut	
[9.34]	/s ʊ . ʃ ʌ l /	/s ʊ . s I . j ʌ l /	social	2
[9.35]	/p I . p I l /	/p ə . r I . t I l /	shell the corn	1
[9.36]	/p ʌ . r ʌ k /	/p ʌ . r ʌ . k ʌ n /	garden/plantation	3
[9.37]	/ʔ a . t ʌ w /	/ʔ ʌ . t ʌ . w ʌ ʔ /	or	

In [9.1]–[9.25], a single consonant is inserted. In [9.1]–[9.5], it is inserted in various positions. In [9.6]–[9.7], it becomes the coda of the final syllable and the length – occurring in the final syllable of the Indonesian cognates – does not occur in the Cilebut Batavian cognates. In [9.8]–[9.9], it becomes the coda of the initial syllable and a tense vowel, as the nucleus of the initial syllable, is altered into a lax vowel. In [9.10]–[9.14], it becomes the coda of the final syllable and diphthong, as the nucleus of the final syllable, is altered into a lax vowel. In [9.15]–[9.25], it – fortis in [9.15]–[9.24] and lenis in [9.25] – becomes the coda of the final syllable and length – occurring in the final syllable of the Indonesian cognates – does not occur in the Cilebut Batavian cognates; and a tense vowel, as the nucleus of the final syllable, is altered into a lax vowel.

In [9.26], the inserted schwa becomes the nucleus of the initial syllable. In [9.27], the inserted high-back-lax vowel becomes the nucleus of the penultimate. In [9.28]–[9.32], the inserted cluster of a fortis consonant plus a lax vowel becomes the initial syllable; in [9.33], the inserted cluster of a lenis consonant plus a lax vowel becomes the initial syllable. In [9.34]–[9.36], a cluster of a lax vowel plus a lenis consonant is inserted; in [9.34]–[9.35], the vowel becomes the nucleus in a certain syllable and the consonant becomes onset in the following syllable; in [9.36], the inserted cluster of a vowel plus a consonant becomes part of the final syllable. In [9.37], the inserted cluster of a consonant plus a vowel plus a consonant becomes the final syllable.

Like the alternations of a lax vowel into another lax vowel which occurs in the final syllable (in List 6), vowel laxing – occurring simultaneously with consonant insertion – also mostly occurs in the final syllables. Instead of being dominated by vowel centering, the vowel laxing (both in List 5 and List 9) is dominated by the alternation of a low-central-tense vowel into a low-central-lax vowel. It is followed by (a) the domination of the alternations of high-front-tense vowel into high-front lax and then by (b) the domination of high-back-tense vowel into high-back-lax vowel.

Like what is found in [5.16]–[5.19] (in List 5), monophthongization is also found in [9.10]–[9.14]. List 5 shows that the monophthongization occurs in the various. List 9 shows that the monophthongization, simultaneously happening with consonant insertion, occurs only in the final syllable.

Millar (2015: 57) explained that the insertion of a glottal closure to an utterance, or sometimes the alternation of another segment into a glottal plosive, is glottalization. Thus, besides the cognates in [1.3], [1.7], [1.12a–b], [1.16a–b], & [1.21a–d] (in List 1), the cognates in [9.3], [9.10]–[9.13], [9.15a–d], [9.17a–c], [9.19a–d], [9.21a–d], & [9.23a–b], undergoing the insertion of a glottal plosive, show glottalization. In addition, the cognates in [1.19a–d] & [3.6a–b] (undergoing the alternation of a consonant into a glottal-fricative) and the cognates in [9.7], [9.8], [9.14], [9.16a–b], [9.18], [9.20], [9.22a–b], & [9.24] (undergoing the insertion of a glottal-fricative) also show glottalization, i.e. fricative-glottalization.

The cognates in [2.2], [2.7a–b], & [4.15a–b] (in List 2) undergo the alternation of a non-nasal consonant into a nasal. Therefore, nasalization happens. In addition, the cognates in [9.3]–[9.5], [9.9], & [9.25] (undergoing the insertion of a nasal) also show nasalization.

In [9.2]–[9.4], the insertion of a consonant is influenced by the homorganic consonant occurring adjacently to the inserted consonant; so, the cognates undergo assimilation. It is contrasted with dissimilation which is found in [4.8a–d]. The assimilation discussed here is an addition to the assimilation found in the identical cognates discussed previously, i.e. in the section of alternations of a vowel or diphthong or triphthong into another segment.

3.6. Segment Deletions

The list below shows the segment deletions in the Indonesian cognates.

List 10. Deletion of Single Segment or Cluster

1	2	3	4	5
[10.1]	/mʊʔ.JI.zʌt/	/mʊ.JI.zʌt/	miracle	
[10.2]	/ʔʌm.bʊ.lʌns/	/ʔʌm.bʊ.lʌn/	ambulance	1
[10.3a]	/mʌh.li.gʌj/	/mʌ.li.gɛʔ/	palace/castle	
[10.3b]	/ʔʌlʌh.ra.ga:/	/ʔʌlʌ.rʌ.gʌʔ/	sport	
[10.3c]	/bər.hən.ti:/	/bə.rən.tIʔ/	cease/stop	1
[10.4]	/gər.ga.Ji:/	/gə.rʌ.JIh/	saw	
[10.5]	/hʌm.bʊr/	/ʔʌ.ʷʊr/	spread	1
[10.6]	/kən.ta.ra:/	/kə.tʌ.rʌʔ/	visible/obvious	1
[10.7a]	/pər.gi:/	/pə.gIh/	go	5
[10.7b]	/bər.tə.mu:/	/kə.tə.mʊʔ/	meet up	6
[10.7c]	/fe.bru.wa.ri:/	/pə.bʊ.wʌ.rIʔ/	February	1
[10.7d]	/gʊ.bər.nʊr/	/gʊ.bə.nʊr/	governor	
[10.8]	/kʷIn.tʌl/	/kIn.tʌl/	quintal	
[10.9]	/kʌ.re.na:/	/kər.nʌʔ/	because	
[10.10]	/kʌ.pI.jʌh/	/kʌ.pʲʌh/	skull-cap	
[10.11]	/tɛ.lɛ.pən/	/təl.pən/	telephone	
[10.12a]	/bə.lʌ.kʌŋ/	/blʌ.kʌŋ/	back	1
[10.12b]	/sə.tə.ri.ka:/	/sə.trI.kʌʔ/	flatiron	5
[10.12c]	/sə.bə.rʌŋ/	/sə.brʌŋ/	across	12
[10.13]	/kʌ.rʊ.wʌn/	/krʊ.wʌn/	known/clear	
[10.14]	/ʔʌ.jo:/	/jʊʔ/	come on	
[10.15]	/bʌ.gʌj.ma.na:/	/gI.mʌ.nʌh/	how	
[10.16]	/wʌ.hʌj/	/ʔʌj/	oh/alas	
[10.17]	/pə.pa.ja:/	/pʌ.jʌʔ/	papaya	
[10.18]	/tʊ.kʌŋ/	/kʌŋ/	craftsman	
[10.19]	/kə.pa.la:/	/pʌ.lʌʔ/	head	2
[10.20]	/ʔI.Jʊk/	/dʊk/	palm fibre	
[10.21]	/sə.dI.kIt/	/dI.kIt/	few	
[10.22]	/bə.la.lʌj/	/lʌ.lɛʔ/	trunk	
[10.23]	/də.lʌ.pʌn/	/lʌ.pʌn/	eight	
[10.24]	/mə.ŋər.ti:/	/ŋər.tIʔ/	understand	11
[10.25]	/zI.jʌ.rʌh/	/Jʌ.rʌh/	pilgrimage	
[10.26]	/bə.lʌ.lʌŋ/	/bʌ.lʌŋ/	grasshopper	1
[10.27]	/mʌ.ʷʊ.lʊt/	/mʊ.lʊt/	birthday of Prophet Muhammad	
[10.28]	/məŋ.gI.gIt/	/ŋI.gIt/	bite	
[10.29]	/mən.tI.mʊn/	/tI.mʊn/	cucumber	
[10.30]	/ləm.bʌ.jʊŋ/	/lʌ.jʊŋ/	violet	
[10.31]	/bər.bʌ.kʊ.hʌn.tʌm/	/bə.rʌn.tə m/	fight/quarrel	1

The cognates in [10.1]–[10.8] undergo the deletion of a single consonant. Alveolar-trill dominates the deletion (in [10.7a–d]). Most of the consonants deleted occur as the coda. The cognates in [10.1] & [10.3a–b] undergo a glottal deletion. Contrast to the alternations of non-glottal into glottal and glottal insertion which become the phenomenon of glottalization, a glottal deletion is DE-GLOTTALIZATION; the alternations of a glottal into a non-glottal found in [1.13] & [2.7a–b] also become the phenomenon of de-glottalization. The cognates in [10.2], undergo the deletion of an alveolar-fricative; it is associated with the notion of WEAKENING or LOSS OF FRICATIVE AS FINAL SYLLABLE CONSONANT pointed out by Solé (2004, p. 1).

The cognates in [10.5]–[10.6] undergo a nasal deletion. Contrast to the alternations of a non-nasal into a nasal (in [2.7a–b] & [2.9]) and a nasal insertion (in [9.3]–[9.5], [9.9], & [9.25]) which become the phenomenon of nasalization, a nasal deletion is de-nasalization. The alternation of a nasal into a non-nasal found in [3.7] also becomes the phenomenon of DE-NASALIZATION.

The cognates in [10.9]–[10.13] undergo the deletion of a single vowel; schwa deletion dominates the alternations (in [10.12a–c]). Dealing with schwa, the domination of its occurrence is found in the insertions of a single vowel (in [9.26]) and the insertions of a cluster of a consonant plus a vowel (in [9.28]–[9.32]). Therefore, both in the segment insertions and segment deletions, schwa shows its domination. In addition, vowel centering (in List 6) underlines the domination of schwa in the alternations.

The cognates in [10.17]–[10.24] undergo deletion of a cluster of a consonant plus a vowel; most of the cluster deleted becomes the initial syllable of the cognate. The cluster in [10.24] dominates the alternation; and as the matter of fact, the cluster is the realization of the Indonesian prefix *me-*; in addition, a deleted cluster in [10.28] (minus /g/) also becomes the realization of the Indonesian prefix. Meanwhile, a cluster of deleted in [10.31] (minus /h/), becomes the realization of the Indonesian bound-root *baku-*.

The cognates in [10.25]–[10.27] undergo deletion of a cluster of a vowel plus a consonant. The vowel becomes coda in the initial syllable and the consonant becomes onset in the penultimate. The cognate in [10.30] undergoes deletion of a cluster: the first part of the cluster, becomes part of the initial syllable; and the second part of the cluster, a vowel, becomes nucleus of the penultimate.

Each cluster-deletion in [10.17] & [10.26] is influenced by the occurrence of a similar cluster. Therefore, haplology, the notion explained by Crystal (2008, p. 224) as the omission or deletion of some of the segments occurring in a sequence of similar articulation, happens. Meanwhile, cluster deletion undergone by the other cognates causes WORD-SHORTENING. It is associated with SYLLABIC SHORTENING pointed out by Carr (2008, p. 180) as he exemplified that change in present-day English pair *serene* and *serenity* undergoes such shortening.

3.7 Reduplications and De-reduplications

The list below shows reduplication and de-reduplication undergone by the cognates.

List 11. Reduplication and De-reduplication

1	2	3	4	5
[11.1]	/nʌf.sɪ.nʌf.sɪ:/	/nʌf.sɪ.nʌf.sɪʔ/	selfish	
[11.2]	/lʊm.bʌ.lʊm.bʌ:/	/lʊm.bʌ.lʊm.bʌʔ/	dolphin	
[11.3]	/rʌm.bʊ.rʌm.bʊ:/	/rʌm.bʊ.rʌm.bʊʔ/	signs	
[11.4]	/ʔʌ.gʌr.ʔʌ.gʌr/	/ʔʌ.gʌr.ʔʌ.gʌr/	gelatine	2
[11.5]	/tə.kʌ.tə.kʌ:/	/tə.kʌ.tə.kʌʔ/	puzzle	
[11.6]	/bɪ.rɪ.bɪ.rɪ:/	/bɪ.rɪ.bɪ.rɪʔ/	sheep	
[11.7]	/tɛ.lɛ.tɛ.lɛ:/	/tɛ.lɛ.tɛ.lɛʔ/	pleonastic	
[11.8]	/bʌ.sʌ.bʌ.sɪ:/	/bʌ.sʌ.bʌ.sɪʔ/	words of courtesy	
[11.9]	/gʌ.rʌ.rʌ.rʌ:/	/gʌ.rʌ.rʌ.rʌʔ/	because of	4
[11.10]	/kʊ.kʊ.kʊ.pʊ:/	/kʊ.pʊ.pʊ.pʊʔ/	butterfly	1
[11.11]	/Cɪ.ta.Cɪ.ta:/	/Cɪ.tʌ.Cɪ.tʌʔ/	wish	
[11.12]	/Jʌ.rɪ.Jʌ.rɪ:/	/Jʌ.rɪ.Jʌ.rɪʔ/	spoke	2
[11.13]	/pʌ.rʊ.pʌ.rʊ:/	/pʌ.rʊ.pʌ.rʊʔ/	lung	1
[11.14]	/gʌ.dʊ.gʌ.dʊ:/	/gʌ.dʊ.gʌ.dʊʔ/	vegetable salad	
[11.15]	/pʊ.rʌ.pʊ.rʌ:/	/pʊ.rʌ.pʊ.rʌʔ/	pretend	2
[11.16]	/pʊ.rɪ.pʊ.rɪ:/	/pʊ.rɪ.pʊ.rɪʔ/	pores	
[11.17]	/fʊ.jʌ.fʊ.jʌ:/	/pʊ.jʌ.pʊ.jʌʔ/	wasting money	
[11.18]	/hʌ.tɪ.hʌ.tɪ:/	/ʔʌ.tɪ.ʔʌ.tɪʔ/	careful	
[11.19]	/ʔʊ.mʌŋ.ʔʊ.mʌŋ/	/kʊ.mʌŋ/	hermit crab	3
[11.20]	/ʔʌn.tɪŋ.ʔʌn.tɪŋ/	/ʔʌn.tɪŋ/	earing	
[11.21]	/ʔʊn.dɛ.ʔʊn.dɛ:/	/ʔʊn.dɛʔ/	truffles	
[11.22]	/Cʊ.mi.Cʊ.mi:/	/Cʊ.mɪʔ/	squid	
[11.23]	/kʊ.rʌ.kʊ.rʌ:/	/kʊ.jʌʔ/	tortoise	
[11.24]	/kʊ.pʊ.kʊ.pʊ:/	/kʊ.pʊʔ/	squid	
[11.25]	/bʌ.lʌj.bʌ.lʌj/	/bʌ.lɛʔ/	bench	
[11.26]	/lʌ.jʌŋ.lʌ.jʌŋ/	/lʌ.jʌ.ŋʌn/	kite	

In [11.1]–[11.18], both the Indonesian and Cilebut Batavian cognates are in forms of reduplicated words. In [11.19]–[11.26], the Indonesian cognates are in forms of reduplicated words while the Cilebut Batavian cognates are not. Therefore, the Cilebut Batavian cognates undergo de-reduplication.

In [11.26], a cluster of a vowel plus a consonant is inserted and becomes a part of the final syllable. The cluster is the phonological realization of a suffix. The suffix seems to be a DUPLIFIX, i.e. a notion explained by Haspelmath (2002; citing Berchem 1991) as a kind of mixture between affix and reduplication.

Segment alternations are found both in reduplicated and de-reduplicated the Cilebut Batavian cognates. The cognates in [11.1]–[11.4], [11.19]–[11.21], & [11.26] undergo a single alternation. The cognates in [11.5]–[11.10] & [11.22]–[11.25] simultaneously undergo two alternations. The cognates in [11.11]–[11.18] simultaneously undergo three alternations. Besides being bold-typed, the segments involved in the alternations are highlighted by various colours.

3.8 Metatheses

Certain single-sounds and certain clusters move from a certain syllabic position into another syllabic position. Such sound movement is known as METATHESIS. The list below recapitulates the metatheses.

List 12. Metathesis of Single Segment and Cluster

1	2	3	4	5
[12.1]	/ m ə . m Λ n . t u l /	/ ŋ Λ m . p u l /	bounce	
[12.2]	/ r ə . b Λ k /	/ s ə r . b Λ k /	spread	
[12.3]	/ ɾ I . k Λ l /	/ g Λ . l I ŋ /	curl	
[12.4]	/ ɾ Λ . d u k /	/ ɾ u . d ə k /	stir/mix	
[12.5]	/ t u m . p u l /	/ m u n . t u l /	blunt/dull	
[12.6]	/ r ə . j Λ l /	/ l ə . j Λ r /	waste money	
[12.7]	/ s ə l . d ε r /	/ s ə r . d ε l /	solder	
[12.8]	/ k a . r ə . n a : /	/ k ə r . n Λ ɾ /	because	
[12.9]	/ k ə . b Λ l /	/ b Λ . ɾ Λ l /	immune	

The cognates in [12.1]–[12.4] undergo PERCEPTUAL METATHESIS, i.e., an alternation explained by Egurtzegi (2014, p. 188) as single-segment movement in an utterance. The cognates in [12.1]–[12.3] undergo perceptual metathesis of a consonant. The cognate in [12.4] undergoes perceptual metathesis of a vowel.

The cognates in [12.5]–[12.7] undergo RECIPROCAL METATHESIS, i.e., alternation explained by Egurtzegi (2014, p. 188) as two non-adjacent segments change positions in an utterance. The cognate in [12.5] undergoes reciprocal metathesis of a fortis consonant and a lenis consonant. The cognates in [12.6]–[12.7] undergo perceptual metathesis of two lenis consonants.

The cognates in [12.8] simultaneously undergoes perceptual metathesis of consonant /r/ and perceptual metathesis of the vowel /ə/. On the other perspective, the alternation can be identified as a reciprocal metathesis of a cluster of a consonant plus a vowel into a cluster of a vowel plus a consonant. The cognate in [12.9] undergoes perceptual metathesis of a cluster.

4. Conclusion

The cognates shared by Indonesian and Cilebut Batavian show the distribution of consonants in the two language codes. Segments becoming the Indonesian consonants are the ones listed in Table 1 minus /q/, /ɣ/, /v/, /θ/, and /ð/. Meanwhile, segments becoming the Cilebut Batavian consonants are the ones listed in Table 1 minus /q/, /ɣ/, /f/, /v/, /θ/, /ð/, /z/, /ʃ/, and /x/.

The consonant distributions show that, compared to Cilebut Batavian, Indonesian comprises more consonants. The distributions cause certain alternations of the Indonesian consonants which do not belong to Cilebut Batavian into the ones belonging to Cilebut Batavian. Such alternations are associated with phonotactics of a language and its phonotactic constraints.

The alternations of a single vowel into another single vowel show vowel laxing. The alternations which involve the Cilebut Batavian clusters also show that a lax vowel occurs in every cluster. Therefore, compared to Indonesian, Cilebut Batavian comprises more lax vowels.

The Indonesian vowels found in the cognates with alternations are all the ones listed in Table 2. The Cilebut Batavian vowels found in the cognates with alternations are the ones listed in Table 2 minus mid-back tense; and it seems to cause the alternations of the Indonesian mid-back tense into another segment. The alternations are found to be some alternations of a mid-back tense into another vowel and an alternation of a mid-back tense into a diphthong (diphthongization).

Tense vowels (including mid-back tense) are found to occur in few identical cognates. The Cilebut Batavian phonotactics seems to govern that a tense vowel can occur in the syllable which is followed by the final syllable

with a diphthong as its nucleus. Therefore, the segments becoming the vowels in both Indonesian and Cilebut Batavian are all of the ones listed in Table 2.

Besides a single cognate undergoing an alternation showing diphthongization, some cognates undergo some alternations showing monophthongization. Therefore, compared to the Indonesian segments, the Cilebut Batavian segments comprise less diphthongs. Meanwhile, an Indonesian triphthong was found to be altered into a vowel; the alternation also belongs to monophthongization. Therefore, compared to diphthongization, monophthongization shows its domination.

References

- Carr, P. (2008). *A glossary of phonology*. Edinburgh: Edinburgh University Press. <https://www.jstor.org/stable/10.3366/j.ctt1g09xp0>
- Crystal, D. (2008). *A dictionary of linguistics and phonetics*. Malden: Blackwell Publishing. DOI: [10.1002/9781444302776](https://doi.org/10.1002/9781444302776)
- Deterding, D., Gardiner, I. A., & Noorashid, N. (2022). *The phonetics of Malay*. E-book. Universiti Brunei Darussalam. DOI: <https://doi.org/10.1017/9781108942836>
- Egurtzegi, A. (2014). Towards a phonetically grounded diachronic phonology of Basque. Dissertation. Universidad del Pais Vasco. <https://egurtzegi.github.io/static/files/Egurtzegi2014.pdf>
- Syamsuar, F. (2015). *Penyelarasan fonologis dalam satuan leksikal Indonesia yang disalin dari bahasa Inggris*. Dissertation. Faculty of Humanities Universitas Indonesia. <https://lib.ui.ac.id/hasilcari?lokasi=lokal&query=Fauzi+Syamsuar>
- Syamsuar, F. (2018). *Aspek fonologis dalam pembentukan kata*. Bogor: UIKA Press. <https://uikapress.uika-bogor.ac.id/?tag=aspek-fonologis-dalam-pembentukan-kata>
- Syamsuar, F. (2025). Phonology. Slides presented at Master Linguistics Department, Faculty of Humanities, Universitas Federal Soedirman. <https://drive.google.com/file/d/1j5GxqmTsnVMYAu3abSuM4OEoi5mzdgsO/view>
- Syamsuar, F. & Priyoto. (2025). Fonotaktik, struktur silabel, dan alternasi bunyi dalam kognat bahasa Indonesia dan dialek bahasa Melayu di Indonesia. Unpublished research report funded by “Pendanaan Hibah Penelitian BIMA 2025” of the The Ministry of Higher Education, Science, and Technology of the Republic of Indonesia.
- Grijns, C. D. (1991). *Kajian bahasa Melayu Betawi*. Translated by Rahayu Hidayat. Jakarta: Pustaka Utama Grafiti. <http://repository.kemendikdasmen.go.id/id/eprint/1958>
- Halm, R. & Slater, J. (2018). Application of the comparative method to Nivkh: Other regular sound correspondences. An article in *Kansas Working Papers in Linguistics*. Vol. 39 (2018) pp. 21-36. DOI: [10.17161/1808.27627](https://doi.org/10.17161/1808.27627)
- Kridalaksana, H. (2008). *Kamus linguistik*. Fourth Edition. Jakarta: Gramedia Pustaka Utama. DOI: [10.17510/wjhi.v11i2.166](https://doi.org/10.17510/wjhi.v11i2.166)
- Haspelmath, M. (2002). *Understanding morphology*. London: Arnold. https://www.researchgate.net/publication/271018639_Understanding_Morphology
- Lodge, K. R. (2009). *Fundamental concepts in phonology: sameness and difference*. Edinburgh: Edinburgh University Press. <https://archive.org/details/fundamentalconce0000lodge>
- Marotta, G. (2015). Lenition in Tuscan Italian. Summary of dissertation in University of Pisa. <https://doi.org/10.1515/9783110211443.2.235>
- Muhadjir. (2000). *Bahasa Betawi: sejarah dan perkembangannya*. Jakarta: Yayasan Obor Indonesia. <https://lib.ui.ac.id/detail?id=20222422&lokasi=lokal>
- Matthews, P. (1997). *The concise Oxford dictionary of linguistics*. Oxford: Oxford University Press. https://archive.org/details/conciseoxforddic0000matt_t1q8
- Millar, R. M. Editor. (2015). *Trask's historical linguistics*. Third edition. New York: Routledge. <https://doi.org/10.4324/9781315728056>
- Mukhlis Abu Bakar. (2019). Sebutan Johor-Riau dan sebutan baku dalam konteks identitas masyarakat Melayu Singapura. Article in *Issues in language studies*, Vol. 8, No. 2. DOI: [10.33736/ils.1521.2019](https://doi.org/10.33736/ils.1521.2019)
- Roach, P. (2009). *English phonetics and phonology: a practical course*. Fourth edition. Cambridge: Cambridge University Press. <https://studylib.net/doc/26110436/peter-roach-english-phonetics-and-phonol>
- SIL International, Indonesian Branch. (2006). *Languages of Indonesia*. Jakarta: SIL International, Indonesia Branch. <https://perpus.petra.ac.id/catalog/site/detail?id=2273384>

- Sole, M. & Pearman. (2010). *Effects of syllable position on sound change: aerodynamic and perceptual data on final fricative weakening*. Article in *Journal of phonetics*, Vol 28, No.2, pp. 289-305. DOI: [10.1016/j.wocn.2010.02.001](https://doi.org/10.1016/j.wocn.2010.02.001)
- Watson, J. C. E. (2002). *The phonology and morphology of Arabic*. Oxford: Oxford University Press. <https://doi.org/10.1093/oso/9780199257591.001.0001>
- Yavaş, M. (2011). *Applied English phonology*. Second Edition. West Sussex: Blackwell Publishing. <https://id.scribd.com/document/963643617/Applied-English-Phonology-Second-Edition-Mehmet-Yavas-Auth-ebook-clean-rebuild-edition>
- Yule, G. (2010). *The study of language*. Fourth Edition. New: York: Cambridge University Press. https://studylib.net/doc/27344567/the-study-of-language-george-yule#google_vignette