



AN ANALYSIS OF THE GENETIC RELATIONSHIP OF ROTE AND SABU LANGUAGES

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Abstract. This study is to determine the relationship, presentation, and time of separation between the Rote and Sabu languages. The theory used in this study is comparative historical linguistics using a 200-word Morrish Swadesh list. The analytical techniques employed in this study are lexical-statistical and glottochronological methods. The target population of this study consists of individuals from Rote and Sabu in Kupang City, with three participants from each language group. Data collection in this study was conducted by creating a Morrish Swadesh list and using recording techniques. The results of this study indicate that the kinship relationship between the Rote and Sabu languages is at the language family group level, as their relationship is only 16%. Meanwhile, the Rote and Sabu languages diverged in 2,282 BCE. The author's suggestion regarding this research is that readers understand and provide criticism of this research. For future researchers, further analysis is needed to find out the closest kinship sub-branch or the greater percentage of kinship between the Rote language and the Sabu language.

Keywords: Comparative historical linguistics, Morrish Swadesh, Sound change, Lexicostatistics, Rote language and Sabu language.

Abstrak. Penelitian ini bertujuan untuk menentukan hubungan, ciri-ciri, dan waktu pemisahan antara bahasa Rote dan Sabu. Teori yang digunakan dalam penelitian ini adalah linguistik historis komparatif dengan memanfaatkan daftar Morrish Swadesh yang terdiri dari 200 kata. Teknik analisis yang digunakan dalam penelitian ini meliputi metode leksikal-statistik dan glottokronologi. Populasi sasaran penelitian ini terdiri dari penduduk asal Rote dan Sabu di Kota Kupang, dengan masing-masing tiga peserta dari setiap kelompok bahasa. Pengumpulan data dalam penelitian ini dilakukan dengan menyusun daftar Morrish Swadesh dan menggunakan teknik perekaman. Hasil penelitian ini menunjukkan bahwa hubungan kekerabatan antara bahasa Rote dan Sabu berada pada tingkat kelompok rumpun bahasa, karena tingkat kekerabatannya hanya sebesar 16%. Sementara itu, bahasa Rote dan Sabu berpisah pada tahun 2.282 SM. Saran penulis terkait penelitian ini adalah agar pembaca memahami dan memberikan kritik terhadap penelitian ini. Bagi peneliti selanjutnya, diperlukan analisis lebih lanjut untuk mengetahui subcabang kekerabatan terdekat atau persentase kekerabatan yang lebih tinggi antara bahasa Rote dan bahasa Sabu

Kata Kunci: Linguistik historis komparatif, Morrish Swadesh, Perubahan bunyi, Leksikostatistik, Bahasa Rote, dan Bahasa Sabu.

INTRODUCTION

Language is a fundamental form of human communication that goes far beyond the mere articulation of words. When people speak, they perform communicative actions that carry goals and intentions related to information exchange, and each of these actions carries meaning that extends beyond its literal content, incorporating tone of voice, facial expression, and gesture. In this sense, language functions not only as a tool for transmitting information but also as a means of building relationships, expressing empathy, and influencing others (Arlini & Saddhono, 2024). Language is also inseparable from culture, it is a system in its own right, made up of interrelated subsystems such as phonology, syntax, and lexicon, and it permeates every aspect of human activity (Fitrah, 2017).

Indonesia illustrates this cultural dimension of language vividly. The country has 719 recorded regional languages, of which 707 remain actively spoken and 143 are documented by



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UNESCO. While Indonesian serves as the official language and the primary medium of national communication, local languages continue to be used in everyday life across regions, particularly in traditional events and customary practices, where they help establish and maintain ethnic and regional identity (Momole, 2022). Because local languages are closely tied to the ethnic groups that use them, they also play an important role in shaping regional and, by extension, national culture (Purnamalia & Parlina, 2023).

Among these regional languages, Rote and Sabu both spoken by communities in East Nusa Tenggara and both belonging to the Austronesian language family are of particular interest. According to Grimes et al. (1997), as cited in Djawa and Sampe (2021), Rote is morphologically agglutinative and belongs to the Austronesian-Malay-Polynesian branch, while Dyen (1965), also cited in Djawa and Sampe (2021), classifies Sabu within the Austronesian-Melanesian sub group, likewise agglutinative in structure. Comri (1981), as cited in Djawa and Sampe (2021), defines agglutinative languages as those in which a word contains more than one morpheme which clearly identifiable boundaries, each morpheme retaining distinct phonetic features that make it readily identifiable for analysis.

A related study by Lanny Koroh and Simon Ola (2015) examined the relationships among six languages of the region Sabu, Helong, Rote, Ndao, Tetun, and Dawan using lexicostatistics and glottochronology within a combined quantitative and qualitative framework. That study found shared lexical percentages, traceable kinship, and estimable separation times among the six languages, concluding that they descend from a single proto-language despite varying degrees of closeness. Sabu and Ndao were found to share the closest relationship, while Helong, Rote, Tetun, and Dawan showed a more distant connection relative to Sabu dan Ndao, with each language retaining distinct features reflected in its identical lexical items. Building on this line of inquiry, the present study narrows its focus specifically to Rote and Sabu.

The geographical proximity of Rote and Sabu suggests the possibility of a genetic relationship reinforced by language contact. Fernandes (1996), as cited in Lailiyah and Wijayanti (2022), argues that language relatedness can be established through lexicostatistical analysis of phonological similarities, commonly using the Swadesh 200-word basic vocabulary list as a diagnostic tool for identifying cognates. Complementing this, Keraf (1996), as cited in Fitrah and Afria (2017), describes Comparative Historical Linguistics as the branch of linguistics concerned with how language relationships and forms change over time, holding that languages used by different communities despite geographical separation often retain traceable, intrinsic connections evidenced by shared linguistic elements with identifiable etymological origins.

Preliminary lexical comparison supports this assumption. Word such as /ai/ “fire” and /ana/ “child” appear identically in both Sabu and Rote, while /awu/ and /afu/ “ash” show a regular sound correspondence between /w/ and /f/ while preserving the same meaning. These similarities point to a shared linguistic ancestry between Rote and Sabu, motivating a closer examination of their genetic relationship hence the present reach, title “Analysis of the Genetic Relationship between Rote, Ndao, and Sabu Languages”

This background raises several questions that the study seeks to answer: How is the genetic relationship between Rote and Sabu languages manifested? How can the kinship relationship between the two languages be presented? And when did Rote and Sabu diverge from their common ancestor? Correspondingly, the research aims to determine the genetic relationship between Rote and Sabu, to present their kinship relationship, and to establish the approximate time of their divergence. The study is expected to offer both theoretical and practical benefits.

Theoretically, it contributes to the development of historical comparative linguistics and serves as a reference for future researchers, supporting Morris Swadesh’s (1952) method of estimating language separation time through the rate of change in core vocabulary. Practically, it provides a reference point for other researchers and helps readers better understand the genetic relationship between Rote and Sabu, thereby advancing the broader study of historical comparative linguistics in Indonesia. To keep the discussion focused, the study is limited to the genetic relationship, its presentation, and the estimated time of divergence between Rote and Sabu, leaving other related issues outside its scope.

METHOD

This research uses a comparative method combining quantitative and qualitative approaches to examine the genetic relationship between the Rote and Sabu languages, following Sudaryanto's (2015) three-step procedure of data collection, analysis, and presentation of results. The quantitative analysis relies on the 200-item Swadesh basic vocabulary list, a widely used tool in comparative linguistics valued for its resistance to lexical change over time, making it a reliable basis for measuring language relatedness. The study focuses specifically on identifying the genetic relationship between Rote and Sabu, describing this kinship, and estimating their time of divergence from a common ancestor.

The research was conducted in Kupang city, East Nusa Tenggara Province, over two months, from proposal writing through thesis defense. Informants were selected based on criteria adapted from Mahsun (2005), as cited in Arsad (2019), including age (17-65 years), local upbringing with limited mobility, basic education level, moderate social status, occupation as farmer or laborer, proficiency in Indonesian, good health, and pride in their native dialect. At least three informants were involved per location one, main informant and two companions to obtain a more objective and reliable picture of the language situation.

Primary data consisted of spoken vocabulary elicited using two instruments: the 200-word Swadesh list, regarded as a reliable tool for capturing stable core vocabulary (Keraf, 1984), and a mobile phone used to record informants' speech, allowing accurate capture of phonological details such as intonation, stress, and pronunciation (Oktavian, Widayati, & Tobing, 2021). Data collection combined direct elicitation using the Swadesh list, following standard lexicostatistical practice (Dyen, 1964), with recording and note-taking of conversations with native speakers, followed by transcription and cross-checking for accuracy.

The data were analyzed using lexicostatistical techniques, in which kinship between languages is determined by comparing vocabulary and identifying degrees of similarity (Crowley, 1992). The analysis involved collecting the 200 Swadesh vocabulary items for both languages, identifying cognate pairs, calculating the percentage of lexical kindship, estimating the time of language separation, calculating the margin of error, and drawing conclusions based on these results

RESEARCH FINDINGS

This section presents the findings of the comparative analysis between the Rote and Sabu languages, followed by a discussion that interprets the findings in relation to the theories of lexicostatistics and glottochronology.

1.) Data Description

The data used in this study consist of 200 Morris Swadesh words taken from the Rote language and the Sabu language, obtained through native speakers of both languages in Kupang City, East Nusa Tenggara Province.

2.) Data Analysis

Based on the data analyzed using the Morris Swadesh list, 200 basic vocabulary items served as the main foundation of this study. The following is the result of the kinship analysis between the Rote language and the Sabu language.

Table 1. Categorical word pairs in the Rote and Sabu languages

No	English	Glos	RL	SL	Category
1	Ash	Abu	afu	awu	Phonemic
2	New	Baru	beuk	wiu	Phonemic
3	Stone	Batu	batu	wowadu	Phonemic
4	Fruit	Buah	Boak	Wue	Phonemic
5	Blood	Darah	Dak	Ra	Phonemic
6	Two	Dua	Dua	Due	Phonemic
7	Lice	Kutu	Utu	Udu	Phonemic

8	Sea	Laut	Tasi	Dahi	Phonemic
9	Shame	Malu	Mae	Mekae	Phonemic
10	Steal	mencuri	Naok	Mena'o	Phonemic
11	Blow	Meniup	Fu	Tiu	Phonemic
12	Drink	Minum	Minu	Ninu	Phonemic
13	Year	Tahun	Teuk	Ta'u	Phonemic
14	Rope	Tali	Tali	Dari	Phonemic
15	Land	Tanah	Dae	rai	Phonemic
16	Bone	Tulang	Duik	Rui	Phonemic
17	Flower	Bunga	Bungga	Bunga	Phonemic
18	Water	Air	oe	ei	Phonetics
19	Under	Bawah	Dae	Da'i	Phonetics
20	Swell	Bengkak	bae	bai	Phonetics
21	And	Dan, dengan	No	Nga	Phonetics
22	You	Kamu	O	Au	Phonetics
23	Die	Mati	Maten	Made	Phonetics
24	House	Rumah	Uma	Am'mu	Phonetics
25	Three	Tiga	Telu	Tal'lu	Phonetics
26	Child	Anak	ana	ana	Identical
27	Fire	Api	ai	ai	Identical
28	Chicken	Ayam	manu	manu	Identical
29	Father	Bapak	papa	papa	Identical
30	Count	Hitung	Reke	Reke	Identical
31	Mother	Ibu	Mama	Mama	Identical
32	Burn	membakar	Tunu	Tunu	Identical
33	Root	Akar	okak	amo	Not Related
34	Wind	Angin	ani	Ngal'lu	Not Related
35	Dog	Anjing	busa	ngaka	Not Related
36	What	Apa	hata, bek	nenga	Not Related
37	Smoke	Asap	hai masuk	hab'bu	Not Related
38	Roof	Atap	mbunin	Dan'ni Am'mu	Not Related
39	On	Atas	Lain	Di'da	Not Related
40	Cloud	Awan	koas	meram'mu	Not Related
41	How	Bagaimana	omai'hata	minami	Not Related
42	Shoulder	Bahu	aluk	Kedungu	Not Related
43	Good	Baik	niulauk	wo'ie	Not Related
44	Wet	Basah	makatabak	bo'bo	Not Related
45	Trunk	Batang	fun	la	Not Related
46	Work	Bekerja	onolauk	dja'ga	Not Related
47	Turn	Belok	belok	At'ta	Not Related
48	True	Benar	dan	petuu	Not Related
49	Heavy	Berat	mabela	mejan'ni	Not Related
50	Lie	Berbaring	sunggu	pehoroanni	Not Related
51	Hunt	Berburu	sombu	Wan'na	Not Related
52	Stand	Berdiri	nimbidek	titu	Not Related
53	Swim	Berenang	ngga'e	nangi	Not Related
54	Walk	Berjalan	lala'ok	kako	Not Related
55	Say	Berkata	Kokolak	Lii	Not Related
56	Dream	Bermimpi	Nilmei	Nii	Not Related
57	Breathe	Bernapas	Hae	Henga	Not Related
58	Think	Berpikir	duduak	Pereke	Not Related
59	Grow	Bertumbuh	Moli	Tajula	Not Related

60	Big	Besar	Gadee	Moneae	Not Related
61	Star	Bintang	Nduk	Moto	Not Related
62	Moon	Bulan	Ulak	Ngi'u	Not Related
63	Feather	Bulu	Bulu	Rau	Not Related
64	Bird	Burung	Mbuik	Koro	Not Related
65	Rotten	Busuk	Kabook	Wau	Not Related
66	Worm	Cacing	Tikalatik	Kelate	Not Related
67	Meat	Daging	Mbaa	Hedai	Not Related
68	In	Dalam	Madema	Da'ra	Not Related
69	Lake	Danau	Le	Ai lobo	Not Related
70	Come	Datang	Mai	Dak'ka	Not Related
71	Leaf	Daun	Don	Rau	Not Related
72	Dust	Debu	bledug, lebu	Awu	Not Related
73	At	Di	naibe	Ma	Not Related
74	Where	Di mana	neng kono	Mami	Not Related
75	He/She	Dia	Ndia	No	Not Related
76	Cold	Dingin	Manili	Sejok	Not Related
77	Sit	Duduk	Manggatuk	Mejad'di	Not Related
78	Tail	Ekor	Ikok	Rolai	Not Related
79	Four	Empat	Ha	Ap'pa	Not Related
80	Salt	Garam	Masik	Mengahi	Not Related
81	Tooth	Gigi	Nisik	Ngutu	Not Related
82	Thunder	Guntur	Manggu'uk	Do'ro	Not Related
83	Day	Hari	Faik	Lodo	Not Related
84	Liver	Hati	Dalek	Ade	Not Related
85	Nose	Hidung	Idun	Hewanga	Not Related
86	Live	Hidup	Masodak	Muri	Not Related
87	Lost	hilang	moton	ele	Not Related
88	Green	Hijau	Momodok	Mengarru	Not Related
89	Black	Hitam	Ngge'ok	Mad'di	Not Related
90	Rain	Hujan	Uda	Adji	Not Related
91	Forest	Hutan	Lasi	Roa	Not Related
92	Fish	Ikan	I'ak	Nadu'u	Not Related
93	This	Ini	Ia	Ne	Not Related
94	Wife	Istri	Saon	Ihiam'mu	Not Related
95	That	Itu	Ndia	Nan'ne	Not Related
96	Bad	Jahat	Manggalauk	Ban'ni	Not Related
97	Road	Jalan	Dalak	Lojar'ra	Not Related
98	Needle	Jarum	Ndandauk	Dja'u	Not Related
99	Fall	Jatuh	Tiba	tuh	Not Related
100	Far	Jauh	Dok	djauu	Not Related
101	If	Jika	Leok	Ki	Not Related
102	Fog	Kabut	-	Awurai	Not Related
103	Foot	Kaki	En	Kae	Not Related
104	Right	Kanan	Konan	Kedanga	Not Related
105	When	Kapan	Fahida	Par'ri	Not Related
106	Wood	Kayu	Ai	Adju	Not Related
107	Small	Kecil	Kadi'ik	Naiki	Not Related
108	Head	Kepala	Langgak	Kat'tu	Not Related
109	Dry	Kering	Tuk	Manggu	Not Related
110	Lightning	Kilat	Manggahadok	Bi'la	Not Related
111	Left	Kiri	Kik	Keriu	Not Related
112	We	Kita	Ita	Di	Not Related

113	Dirty	Kotor	nggenggeok	Ra'i	Not Related
114	Skin	Kulit	Loun	Kuri	Not Related
115	Yellow	Kuning	Kunik	Kelarra	Not Related
116	Spider	laba-laba	Bulau	Merake	Not Related
117	Other	Lain	Fe'ek	dowalla	Not Related
118	Man	laki-laki	Touk	Womone	Not Related
119	Sky	Langit	Kuas	Liru	Not Related
120	Wide	Lebar	Maloa	Bal'la	Not Related
121	Neck	Leher	Luisa'ik	Lakoko	Not Related
122	Fat	Lemak	Minan	Manyi	Not Related
123	Tongue	Lidah	Man	We'o	Not Related
124	Eat	Makan	Mu'a	Nga'a	Not Related
125	Night	Malam	Leodaek	Mad'da	Not Related
126	Eye	Mata	Mata	El'la	Not Related
127	Throw	melempar	Bia	Ke'dji	Not Related
128	See	melihat	Mete	Heleo	Not Related
129	Spit	meludah	Mudi	Penyi'u	Not Related
130	Cook	memasak	Dode	Hogo	Not Related
131	Split	membelah	Kada	Bak'ke	Not Related
132	Buy	membeli	Hasa	Wal'li	Not Related
133	Open	membuka	Soin	Boke	Not Related
134	Kill	membunuh	Alan	Pemad'de	Not Related
135	Hold	memegang	To'un	Par'ro	Not Related
136	Squeeze	memeras	Ke'en	panyii	Not Related
137	Choose	memilih	Ele	Pili	Not Related
138	Cut	memotong	Ke	At'te	Not Related
139	Hit	memukul	Tutun	Wab'be	Not Related
140	Cry	menangis	Nimtani	Tangi	Not Related
141	Kiss	mencium	An'idun	Hengadu	Not Related
142	Hear	mendengar	Namnene	Rangnge	Not Related
143	Shoot	menembak	Tilon	Wab'ba	Not Related
144	Flow	mengalir	Anfa	Mili	Not Related
145	Knock	mengetuk	Dedelen	Mengat'tu	Not Related
146	Dig	menggali	Ankali	kai	Not Related
147	Scratch	menggaruk	Ankakaluk	Kao	Not Related
148	Bite	menggigit	Anka	Hib'be	Not Related
149	Tie	mengikat	Anhengge	Udje	Not Related
150	Suck	mengisap	Anmusi	Hemuhe	Not Related
151	Yawn	menguap	Ma'ma	Menguap	Not Related
152	Chew	menguyah	An'ale	Nya'mi	Not Related
153	Stab	menikam	Anbaun	Tab'bu	Not Related
154	Sew	menjahit	Se'u	Dja'o	Not Related
155	Red	Merah	Ndilak	Mea	Not Related
156	They	Mereka	Sila	Na	Not Related
157	Mouth	Mulut	Bafa	Ub'ba	Not Related
158	Vomit	Muntah	Muta	Mad'du	Not Related
159	Climb	Naik	Hene	Hae	Not Related
160	Name	Nama	Nade	Ngara	Not Related
161	Mosquito	nyamuk	Ninik	Lag'guu	Not Related
162	Person	Orang	Hatoli	Dau	Not Related
163	Hot	Panas	Matobik	Pana	Not Related
164	Long	panjang	Manalo	Medera	Not Related
165	Sand	Pasir	Salaek	Lahelae	Not Related

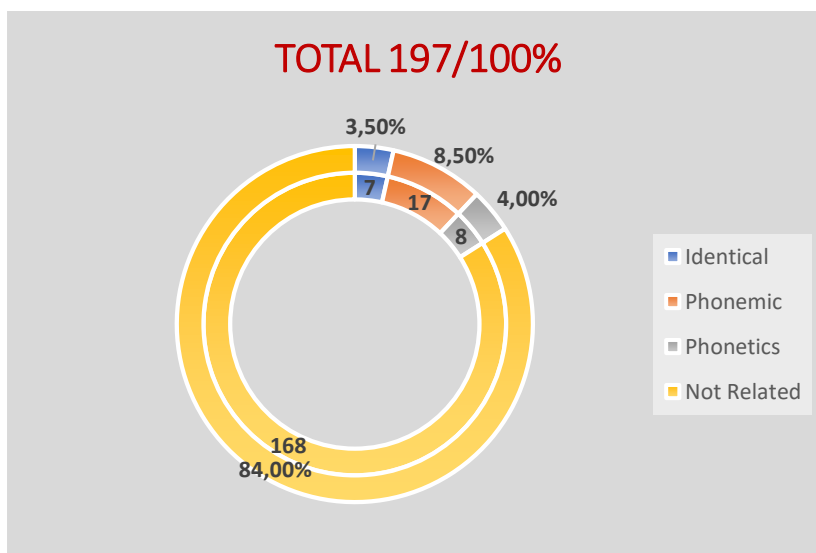
166	Breast	Payudara	Su'un	Huhu	Not Related
167	Short	Pendek	Kekeuk	Ba'ba	Not Related
168	Woman	Perempuan	Inak	Woban'ni	Not Related
169	Belly	Perut	Teik	Dal'lu	Not Related
170	Back	Punggung	Aluk	Keballi'kao	Not Related
171	Broken	patah	tetan	pada	Not Related
172	White	Putih	Fulak	Pudi	Not Related
173	Hair	Rambut	Buluk	Rokat'tu	Not Related
174	Grass	Rumput	Na'u	Rodju'u	Not Related
175	Sick	Sakit	Namhedi	Pad'da	Not Related
176	One	Satu	Esa	Ahii	Not Related
177	I	Saya	Au	Ya	Not Related
178	Wing	Sayap	Li'dan	Roal'la	Not Related
179	Hide	Sembunyi	Mafoni	Pehunian'ni	Not Related
180	Narrow	Sempit	Kadi'ik	Kob'bo	Not Related
181	All	Semua	Basan	Hari-hari	Not Related
182	Who	Siapa	Fe	Nadau	Not Related
183	Husband	Suami	Saon	Dau'rae	Not Related
184	Know	Tahu	Malelak	Toi	Not Related
185	Sharp	Tajam	Matande	Na'a	Not Related
186	Afraid	Takut	Bi	Meda'u	Not Related
187	Hand	Tangan	Limak	Kae nga'a	Not Related
188	Thick	Tebal	Makate	Me'a	Not Related
189	Ear	Telinga	Didok	Wodil'lu	Not Related
190	Egg	Telur	Mantolo	Dal'lu manu	Not Related
191	Fly	Terbang	Lambu	Lila	Not Related
192	Laugh	Tertawa	Hika	Ma'rii	Not Related
193	Not	Tidak	Ta	Ad'do	Not Related
194	Sleep	Tidur	Sunggu	Ba'dji	Not Related
195	Rat	Tikus	Lapok	Kebuku	Not Related
196	Thin	Tipis	Nasun	Me'ni	Not Related
197	Old	Tua	Lasik	Weka	Not Related
198	Dull	Tumpul	Mba'ak	Kebal'la kolo	Not Related
199	Intestines	Usus	Ate	kenai	Not Related
200	Snake	Ular	Mengge	Ngidu	Not Related

The vocabulary list above presents the Morris Swadesh word pairs of the Rote and Sabu languages, totaling 200 words in accordance with the basic Morris Swadesh guidelines.

Total Number by Category

Based on the category analysis of Morris Swadesh's 200-word data, the Rote and Sabu language word pairs can be totaled in percent form in the following diagram.

Category percent diagram



Based on the diagram above, it is known that the Rote and Sabu languages still have similarities both phonetically, phonemically and even have identical word pairs. The 200 kin word pairs in the table found 32 kin word pairs including phonetic, phonemic and idenstic. The other 168 words pairs fall into the category of unrelated word pairs because there is no similarity at all.

DISCUSSION

This section discusses the findings obtained from the analysis of the 200-word Morris Swadesh list for the Rote and Sabu languages. The discussion further examines the word pair relationships classified as phonetic, phonemic, and identical. The following is a more detailed analysis of the sound changes found between the two languages:

1. Phonemic correspondence refers to a phonemic change between two languages that occurs reciprocally, regularly, and with high frequency, so that the balanced form found between the two languages can be considered related (Keraf, 1996: 125). The data are discussed below.

1.1 Abu /afu/ (Rote) → /awu/ (Sabu)

The lexical change from abu, /afu/ in Rote to /awu/ in Sabu is a concrete example of a phonological phenomenon known as the process of lenition or sound loosening, which generally reflects a universal tendency in natural language evolution. Articulatorily, the /f/ sound is realized as a voiceless labiodental fricative, produced through the friction of partially obstructed air between the lower lip and upper teeth, resulting in a characteristic hissing or wind sound. In this transformation process, the /f/ sound shifts to /w/, which belongs to the category of voiced labio-velar approximants or semi-vowels. The approximants are produced through the approach of the speech organs-lips and velum-without creating air turbulence, thus forming a freer airflow and without any real friction. This phenomenon occurs in intervocalic position, precisely on consonants in the second syllable, where this kind of phonological context is often a conducive environment for lenition. This process of change, which can also be categorized as semi-vocalization, signifies a shift from consonants with strong articulatory constraints towards looser, vocalic articulation. Theoretically, the change not only reflects the physiological aspect of articulatory efficiency, but also confirms the principle of language economy, where speakers naturally tend to minimize the effort of sound production without reducing the clarity of meaning. Thus, the transformation of the phoneme /f/ into /w/ does not merely

represent sound variation, but is also evidence of systematic phonetic rules that work consistently in the dialectal development of languages in the region.

1.2 Baru /beuk/ → /wiu/

The change of the word new, from /beuk/ in Rote to /wiu/ in Sabu, illustrates a structured phonemic shift. In word-initial position, the voiced bilabial stop /b/ shifts to the voiced labio-velar approximant /w/. This shift from a stop consonant to an approximant reflects lenition and semi-vocalization, arising from speakers' tendency to minimize articulator barriers. The vowel sequence /eu/ then undergoes diphthongization to /iu/, adjusting the vowel pattern to the sound distribution typical of Sabu. Meanwhile, the loss of the final /k/ reflects apocope, the deletion of the closing sound segment as a way of simplifying word structure. Together these changes affect the onset, nucleus, and coda of the syllable, indicating restructuring at the phoneme level rather than a merely superficial shift. Such phenomena support the principle that sound systems move toward patterns that are more efficient and easier to pronounce without reducing clarity of meaning, while also demonstrating regular, repeatable sound laws traceable in the dialectal development of the language.

1.3 Batu /batu/ → /wowadu/

The change from batu in Rote to wowadu in Sabu is a notable example of complex sound restructuring across several syllable positions. A reduplicative element, /wo/, is added at the beginning of the word, likely serving to emphasize meaning or mark a grammatical function. Within the root, the initial voiced bilabial stop /b/ shifts to the voiced labio-velar approximant /w/, again reflecting lenition and semi-vocalization, whereby articulatory constriction is reduced to ease pronunciation. Additional vocalic and consonantal elements form the longer syllable pattern /wo-wa-du/, in which /t/ is retained in adapted form within the syllable /du/, though it may weaken further in some dialects. This example shows that the change involves not only phoneme substitution but also syllable addition through reduplication and pattern expansion, a process common in Austronesian languages for marking nuances of meaning, derivation, or intensification. The form batu → wowadu therefore reflects both the softening of consonants through semi-vocalization and a more complex restructuring of sound patterns through repetition and expansion, consistent with the principle that sound systems evolve to preserve clarity of meaning while adapting to the distinctive phonological patterns of the target language.

1.4 Buah /Boak/ → /Wue/

The change from buah, /boak/ in Rote, to wue in Sabu involves restructuring across several syllable positions. In the first syllable, the voiced bilabial stop /b/ shifts to the voiced labio-velar approximant /w/, reflecting both lenition and semi-vocalization and indicating reduced articulatory resistance at the onset. The vowel nucleus /oa/ is simplified to /u/, followed by diphthongization with the addition of /e/ in the second syllable. Meanwhile, the final /k/ of the second syllable is deleted through apocope, a common process for shortening word structure. The change buah → wue thus involves onset softening, nucleus adjustment, and coda deletion, together illustrating the tendency of language's sound system to move toward more articulation-efficient forms while preserving clarity of meaning and communicative function.

1.5 Darah /Dak/ → /Ra/

The change of the word blood, from /dak/ in Rote to ra in Sabu, is concise but meaningful, involving restructuring within a single syllable. In onset position, the voiced alveolar stop /d/ shifts to the voiced alveolar trill /r/, reflecting lenition, in which a sound with stronger resistance weakens into one produced with a lighter, vibratory articulation. The vowel nucleus /a/ remains stable, while the final /k/ is deleted through apocope to ease pronunciation. The change blood → ra thus combines onset lenition, nucleus stability, and coda deletion, following the principle of articulatory economy without loss of meaning, and reflects the regular, rule-governed sound correspondences typical of Austronesian language evolution.

1.6 Dua /dua/ → /due/

The shift from dua in Rote to due in Sabu is modest but regular. The initial consonant /d/ and the vowel /u/ of the first syllable remain unchanged, indicating stability in word-initial position, while the vowel of the second syllable changes from /a/ to /e/. This shift represents a raising of vowel quality, from an open vowel to a mid-vowel, likely adapting to more common sound patterns in Sabu, and can be understood as a form of vowel harmonization that produces a smoother pronunciation without introducing ambiguity of meaning. The absence of a closing consonant confirms that the change is confined to the vowel nucleus of the second syllable. The pattern dua → due shows that sound change need not be comprehensive; it can occur selectively in specific positions to balance articulatory efficiency, regularity, and clarity.

1.7 Kutu /utu/ → /udu/

The shift from kutu, /utu/ in Rote, to udu in Sabu centers on the consonant, while the vowel elements remain stable. The initial vowel /u/ is fully retained, while the key change occurs in the onset of the second syllable, where /t/ becomes /d/. This shift from a voiceless to a voiced stop reflects voicing, adding vocal-fold vibration and lightening the transition into the surrounding vowels; it belongs to the broader category of lenition, or the softening of articulatory constriction, common in intervocalic position. The absence of a closing consonant preserves the open syllable structure. The change kutu → udu therefore shows selective voicing in the second syllable while the vowels and overall clarity of meaning remain intact, again reflecting the balance between ease of articulation and regularity of sound change typical of Austronesian dialects in the region.

1.8 Laut /tasi/ → /dahi/

The lexical change of the word sea, from tasi in Rote to dahi in Sabu, offers an instructive example of how sound laws operate among closely related Austronesian languages in the East Nusa Tenggara region. Because tasi and dahi share the same meaning, this correspondence suggests that both forms descend from a common proto-lexical form. Phonologically, the change involves two consonant segments. First, the word-initial /t/, a voiceless alveolar stop, becomes /d/, a voiced alveolar stop – a process of voicing, or lenition, in which the voiceless sound weakens into voiced one while the alveolar place of articulation is preserved. Second, the medial /s/, a voiceless alveolar fricative, shifts to /h/, a voiceless glottal fricative – a process of spirantization or debuccalization, in which the place of articulation moves from the oral cavity toward

1.9 Malu /mae/ (Rote) → /mekae/ (Sabu)

The change in the word for shame, from mae in Rote to mekae in Sabu, shows a further interesting phonological process among the regional languages of East Nusa Tenggara. The meaning remains identical, indicating lexical continuity, while the Sabu form expands phonologically through the addition of a sound segment. Structurally, /mae/ consists of the syllables ma-e, whereas /mekae/ has the structure me-ka-e. The most prominent change is the insertion of /k/ in medial position, a voiceless velar stop; this addition reflects epenthesis, the insertion of a sound to maintain or clarify syllable structure, often serving as a phonotactic adjustment. In addition, the vowel of the first syllable shifts from /a/ to /e/, though this vowel alternation is not always stable and may vary dialectally, consistent with patterns of vowel neutralization or harmony found in many Austronesian languages. The inserted /k/ also functions to prevent hiatus – the direct juncture of two vowels, as seen between /a/ and /e/ in /mae/ – by breaking the sequence into the more phonotactically stable syllables me-ka-e. This kind of medial stop insertion, aimed at preserving CV/CVC syllable balance, is common in closely related languages as a strategy for marking morpheme boundaries or improving phonetic clarity.

1.10 Mencuri /naok/ (Rote) → /mena'o/ (Sabu)

The change in the word for steal, from naok in Rote to mena'o in Sabu, is more complex, involving prefixation, diphthong splitting, and final-consonant lenition. The prefix /me-/ adds a new initial syllable absent in naok, forming the structure me-na-

'o; morphologically, this prefix functions as a verb marker common in many Austronesian languages. The diphthong /ao/ in naok is broken by the glottal stop /ʔ/ in mena'o, creating a third syllable and resolving the vowel sequence (hiatus). Meanwhile, the final voiceless velar stop /k/ in naok weakens or disappears entirely in mena'o, an example of debuccalization, in which the place of articulation shifts from velar toward the glottis, or the stop is lost altogether. Phonemically, then, this change combines prefixation (the addition of /m/ and /e/), diphthong splitting in the second syllable, and consonant weakening in the final syllable.

1.11 Meniup /fu/ (Rote) → /tiu/ (Sabu)

The change in the word for blow, from fu in Rote to tiu in Sabu, shows fortition in the initial sound, where the voiceless labiodental fricative /f/ is replaced by the voiceless alveolar stop /t/. Articulatorily, the airflow resistance shifts from mere friction (fricative) to a full closure (stop), together with a shift in place of articulation from labiodental to alveolar. The form tiu also inserts the vowel /i/ between the consonant and the vowel /u/, forming the diphthong /iu/ and reflecting a vocalization process that adjusts the syllable to fit Sabu phonotactics more closely. Phonemically, the change affects both the onset consonant, which shifts from a fricative to the more stable stop /t/, and the vowel nucleus, which expands through the added /i/ without altering the basic meaning — reflecting a broader pattern in which fricative consonants shift toward stops and vowel structures adjust to maintain sound balance between Rote and Sabu.

1.12 Minum /minu/ (Rote) → /ninu/ (Sabu)

The change in the word for drink, from minu in Rote to ninu in Sabu, reflects anticipatory nasal assimilation, in which the initial nasal /m/ shifts to /n/ to match the nasal consonant /n/ in the second syllable. Articulatorily, /m/ is a voiced bilabial nasal and /n/ a voiced alveolar nasal; the shift unifies the place of articulation at the alveolar ridge, easing the transition between the two nasal consonants, a process that can also be classified as homorganic assimilation. The change is confined to the initial phoneme of the first syllable (mi- → ni-), while the second syllable (-nu) remains unchanged, so the syllable pattern CV-CV is preserved. This example illustrates nasal homorganization as part of a broader pattern of sound innovation in Sabu aimed at smoother articulation and consistent phonotactic structure.

1.13 Tahun /teuk/ (Rote) → /ta'u/ (Sabu)

The change from teuk in Rote to ta'u in Sabu involves monophthongization and final-consonant syncope. The diphthong /eu/ in teuk is simplified to the single vowel /a/, a process called monophthongization that reduces the articulatory complexity of tongue movement required for a diphthong, replacing it with a simpler, more open vowel. In addition, the final velar stop /k/ in teuk is lost in ta'u, an instance of apocope, or final-consonant syncope, which commonly simplifies word-final pronunciation in dialectal change. The change therefore affects both the syllable nucleus (vowel simplification) and the word-final position (consonant deletion), producing a shorter, lighter form — consistent with the general pattern of sound simplification observed in the Rote-Sabu relationship, where diphthongs tend to simplify and final consonants tend to be lost.

1.14 Tali /tali/ (Rote) → /dari/ (Sabu)

The change from tali in Rote to dari in Sabu involves voicing of the initial stop /t/ to /d/, lightening the pronunciation through vocal-fold vibration, and a liquid substitution in the second syllable, where /l/ (a lateral sound produced with airflow along the side of the tongue) shifts to /r/ (produced with a tap or trill at the alveolar ridge), giving the sound a more vibrant quality. These two changes occur at the beginning and in the middle of the word respectively, while the vowels /a/ and /i/ remain unchanged. Overall, tali → dari illustrates the tendency in the Rote-Sabu relationship to ease pronunciation by voicing stops and substituting between consonants that share a similar place of articulation.

1.15 Tanah /dae/ (Rote) → /rai/ (Sabu)

The change from *dae* in Rote to *rai* in Sabu mainly involves liquid consonant substitution and a vowel shift. The initial /d/ (a voiced alveolar stop) shifts to /r/ (a voiced alveolar trill), a process of liquidization; although both are articulated at the alveolar ridge, /r/ involves vibration of the tongue tip and thus sounds more dynamic than the simple closure of /d/. In the vocalic portion, the diphthong /ae/ shifts to /ai/, a different diphthong pattern more typical of Sabu; this can be described as diphthong shifting, since the vowel sequence changes from a mid-front to a high-front glide pattern. The changes are confined to the onset consonant and the vowel nucleus, without any addition of syllables, and together they reflect Sabu's tendency toward a more dynamic liquid /r/ and lighter, smoother diphthongs.

1.16 Tulang /duik/ (Rote) → /rui/ (Sabu)

The change from *duik* in Rote to *rui* in Sabu involves two main processes: liquidization and final-consonant syncope. The initial /d/ (voiced alveolar stop) shifts to /r/ (voiced alveolar trill), replacing the simple closure with a more vibrant, liquid articulation at the same place of articulation. Meanwhile, the final /k/ (voiceless velar stop) in *duik* is lost in *rui*, an instance of apocope that eases word-final pronunciation. The vowel sequence /ui/ is retained, so the change involves shortening through consonant deletion rather than monophthongization. Centered on the initial consonant (stop to liquid) and the final consonant (deletion), while the vowel nucleus remains stable, the change *duik* → *rui* exemplifies the broader tendency in the Rote-Sabu relationship toward more liquid initial consonants and simplified word-final structure.

1.17 Bunga /bungga/ (Rote) → /bunga/ (Sabu)

The change from *bunga* in Rote to *bunga* in Sabu reflects degemination, the simplification of a doubled (geminate) consonant. In Rote, the word contains the doubled voiced velar stop /gg/; in Sabu, this is reduced to a single /g/, lightening and speeding up the articulation. This change occurs in the second syllable, while the vowels /u/ and /a/ remain unchanged. The example shows that Sabu tends to simplify geminate consonants for greater articulatory efficiency, consistent with the general pattern of sound adjustment observed in the Rote-Sabu relationship, reducing redundant articulatory effort within a syllable without altering the word's meaning.

2. Phonetic Similarity between Rote and Sabu Languages

When a pair of words in the two languages cannot be shown to have phonemic similarity, but the words nonetheless sound alike because they share a similar articulatory position, the pair can still be considered related (Kerap, 1996: 125).

2.1 *oe* (Rote) → *ei* (Sabu) 'water'

The pair *oe* (Rote) and *ei* (Sabu), meaning 'water', shows a marked vowel shift. The rounded back vowel /o/ in Rote moves toward the front vowel /e/, followed by the high front vowel /i/ in Sabu — a pattern known as vowel fronting and raising, since the point of articulation moves from the back toward the front of the oral cavity with a higher tongue position. The change occurs in the syllable nucleus; phonetically, these are voiced vowels produced without airflow obstruction, so neither a stop nor a trill is involved. This example reflects a regular sound correspondence consistent with the principles of historical phonology, in which gradual, systematic shifts in articulation habit can produce such patterns between related languages.

2.2 *bae* (Rote) → *bai* (Sabu) 'swollen'

The pair *bae* (Rote) and *bai* (Sabu), meaning 'swollen', shows a vowel-raising process in which the final /e/ in Rote becomes /i/ in Sabu, as the tongue position rises from a mid vowel to a high front vowel. Since the word contains only one syllable, this change occurs entirely within the syllable nucleus. Phonetically, the vowels involved are voiced and produced without articulatory obstruction. This regular correspondence again supports the principle of systematic sound change under historical phonology and provides further evidence of kinship between the two

languages, illustrating a natural pattern of vowel adaptation among closely related languages.

2.3 No (Rote) → Nga (Sabu) 'and, with'

The pair No (Rote) and Nga (Sabu), meaning 'and, with', shows a change in the syllable-final consonant along with the addition of a nasal element. The vowel /o/ is retained, but Sabu adds the nasal consonant /ng/ at the onset, transforming No into Nga — a pattern of initial nasalization. The alveolar nasal /n/ in No effectively shifts toward the velar nasal /ŋ/ in Nga, moving the place of articulation further back in the oral cavity while remaining a nasal sound throughout. This shift reflects assimilation to the speech habits of Sabu speakers and represents a further example of regular sound correspondence supporting the kinship between the two languages.

2.4 Dae (Rote) → Da'i (Sabu) 'down'

The pair Dae (Rote) and Da'i (Sabu), meaning 'down', shows the insertion of a glottal stop /ʔ/ between the vowels /a/ and /i/. While dae ends in the diphthong /ae/, Sabu splits this diphthong by inserting a glottal consonant, producing Da'i — a process known as glottal insertion. The glottal stop, produced by briefly closing and releasing the vocal folds, functions here to separate the two vowels so that they are pronounced distinctly rather than as a single glide. This change occurs in the syllable nucleus, affecting the transition between /a/ and /i/, and reflects an orderly phonological innovation in Sabu that remains traceable to its original Rote form.

2.5 (Rote) → Au (Sabu) 'you'

The pair O (Rote) and Au (Sabu), meaning 'you', shows the addition of a vowel element that produces a diphthong. Where Rote uses the single vowel /o/, Sabu develops the diphthong /au/ by adding the open front vowel /a/ before sliding into the back vowel /u/. Phonetically, this shifts articulation from a single mid rounded vowel to a two-part glide beginning open and ending closed and back. The change occurs entirely within the syllable nucleus and reflects a regular pattern of vowel addition consistent with the principles of historical phonology, supporting the broader hypothesis of kinship between Rote and Sabu.

2.6 Maten (Rote) → Made (Sabu) 'dead'

The change from Maten in Rote to Made in Sabu illustrates lenition, or consonant softening. Specifically, the voiceless alveolar stop /t/ in the second syllable (-ten) becomes the voiced alveolar stop /d/ in Made, a process of voicing in which vocal-fold vibration is added while the place of articulation remains the same. This change occurs in the onset of the second syllable and reflects a common form of dialectal adjustment that makes pronunciation easier or better suited to the local phonological system, while the lexical meaning of the word remains intact, confirming the etymological relationship between the two dialects.

2.7 Uma (Rote) → Am'mu (Sabu) 'house'

The change from Uma in Rote to Am'mu in Sabu, both meaning 'house', reflects both segmental sound change and morphophonemic adjustment. The addition of the nasal /m/ and the consonant doubling seen in -m'mu can be understood as a form of gemination that marks emphasis or a particular grammatical function in the Sabu dialect. The bilabial nasal /m/ retains its voiced quality, while the vowel shift from /a/ to /u/ at the end of the word reflects an adaptation to Sabu's phonotactic pattern; this can also be linked to partial metathesis, in which sound positions shift to better fit the local morphological system. The change from Uma to Am'mu therefore reflects both phonetic adjustment and a morphological process specific to Sabu word formation.

2.8 Telu (Rote) → Tal'lu (Sabu) 'three'

The change from Telu in Rote to Tal'lu in Sabu, both meaning 'three', illustrates gemination, or consonant doubling. The single voiced alveolar lateral /l/ in Telu is lengthened to /ll/ in Tal'lu, a form of phonetic emphasis or dialectal variation commonly found in Austronesian languages, related to epenthesis, in which an additional /l/ segment is inserted in medial position to adjust the phonotactic pattern

and rhythm of the word. The articulation of /l/ remains voiced throughout, with lateral airflow and vocal-fold vibration preserved. This change occurs at the boundary between the first and second syllables, where /l/ functions simultaneously as the coda of the first syllable and the onset of the second, illustrating the kind of prosodic and phonotactic adjustment characteristic of Rote-Sabu dialectal variation.

3. Identical Word Pairs of Rote and Sabu Languages

Identical word pairs are those in which the phonemes of both languages are the same, showing no apparent change between them (Keraf, 1996: 124). The following table presents the identical word pairs found between the Rote and Sabu languages.

Table 2. Identical word pairs of the Rote and Sabu languages

No	English	Gloss	RL	SL	Category
1	Child	Anak	ana	ana	Identical
2	Fire	Api	ai	ai	Identical
3	Chicken	Ayam	manu	manu	Identical
4	Father	Bapak	papa	papa	Identical
5	Count	Hitung	Reke	Reke	Identical
6	Mother	Ibu	Mama	Mama	Identical
7	Burn	membakar	Tunu	Tunu	Identical

Only 7 identical word pairs were found among the 200 words compared. Among these identical pairs, correspondence can be observed in the vowel sounds /a-a/, /u-u/, /i-i/, and /e-e/.

4. Lexicostatistics on the Rote and Sabu Languages

To determine the percentage of the relationship between the Rote and Sabu languages, this study applies the lexicostatistical technique. The calculation formula is as follows:

$$C = k/g \times 100\%$$

$$C = 32/197 \times 100\% = 16\%$$

Where C is the percentage of the language relationship, k is the number of cognate words, and g is the number of glosses compared. Based on this calculation, the kinship relationship between the Rote and Sabu languages is 16%. According to the following percentage grouping table, this places the two languages within the “families of stock” category (12–36%).

Cognate dialect of language: 81–100%; Language of subfamily: 61–81%; Language of family: 36–61%; Families of stock: 12–36%; Stock of microphylum: 4–12%; Microphyla of a mesophylum: 1–4%; Mesophyla of a macrophylum: 0–1%. Based on this classification, the linguistic relationship between the Rote and Sabu languages, at 16%, falls under the “families of stock” category.

5. Glottochronology

According to Keraf (1996: 157), the glottochronology technique relies on the percentage of cognates obtained from the preceding lexicostatistical calculation. This method assumes that the languages under study have a relatively stable rate of change, unaffected by accelerating or inhibiting factors such as extensive borrowing or intensive social contact. The technique is used to estimate when the two languages diverged, using the following formulas.

Separation Time Formula

This first formula produces an initial estimate of the separation time, which is not yet the final result.

$$W = \log C / (2 \log r)$$
$$W = \log 16\% / (2 \times \log 80.5\%) = -0.796 / -0.188 = 4.234$$

where W is the time of separation in thousands of years, C is the percentage of kinship, r is the retention rate per 1,000 years (80.5%), and log is the base-10 logarithm. The result, 4.234, is multiplied by 1,000 to obtain the estimate in years.

Standard Error Formula

The initial estimate must then be refined using the standard error formula to obtain a more accurate final result.

$$s = \sqrt{C(1-C)/n}$$
$$s = \sqrt{(0.16(1-0.16)/197)} = \sqrt{(0.1344/197)} = \sqrt{0.000682} = 0.261, \text{ rounded to } 0.27$$

where s is the standard error in percentage, C is the percentage of cognate words, and n is the number of words compared.

New C Formula

The next step sums the original percentage of kinship with the standard error obtained above.

$$\text{New } C = \text{Old } C + S = 0.16 + 0.27 = 0.43$$

New Separation Time

The separation time is then recalculated using the new C value.

$$W = \log(\text{New } C) / (2 \log 80.5\%) = \log 0.43 / -0.188 = -0.367 / -0.188 = 1.952$$

Finally, the legal separation time between the two languages is obtained by subtracting the new estimate from the original estimate:

$$\text{Old } W - \text{New } W = 4.234 - 1.952 = 2.282$$

Based on this standard-error calculation, the age of the Rote and Sabu languages can be summarized as follows: the two languages were a single language approximately 4,234 ± 2.282 years ago, or alternatively, they were a single language between 4,234 and 1,952 years ago; the Rote and Sabu languages are estimated to have begun separating from Malay between 2,209 and 73 AD, calculated from 2025.

Based on the analysis above, the Rote and Sabu languages belong to the same level of linguistic relationship, namely the “family of stock” level. This relationship can be illustrated through a language family tree, in which both languages descend from the Austronesian language family via the Polynesian Malay branch and, more specifically, the West Central-Eastern Polynesian Malay sub-branch. The Rote and Sabu languages began to separate from this shared sub-branch around 2,282 BC. Given that their overall percentage of kinship is only 16%, the appropriate classification for the relationship between these two languages is “family of stock.”

CONCLUSION

Based on the results of the analysis from the previous chapter, it can be concluded how the kinship relationship, how the percentage of kinship relationships and when the Rote and Sabu languages separated.

- The genealogical relationship between the Rote and Sabu languages, based on the analysis of Morris Swadesh’s 200-word list, reveals several categories of word pairs: 17 phonemic pairs, 8 phonetic pairs, 7 identical word pairs, and 168 pairs with no apparent relationship.
- Based on the calculated data, the percentage of linguistic relationship between the Rote and Sabu languages has been determined. This is evidenced in the previous chapter, where several lexical items show similarities in their phonemic, phonetic, and

identical forms. The analysis indicates a lexical similarity of 16%, which classifies the relationship between these languages as belonging to the "families of stock" category.

- c. Through this analysis, the author identifies a point of divergence between the Rote and Sabu languages from a common ancestral language, estimated to have occurred in 2.282 BCE. Therefore, the time of separation is calculated to be approximately 257 years ago.

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