Language Kinship between Acehnese and Tamiang Malay Language

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ABSTRACT

This study aimed to determine the percentage of kinship that exists between Acehnese and Tamiang Malay language and to find out the separation period of the two languages. This research was conducted using the quantitative method in which the data in this research is statistical. The techniques used in analyzing the data were lexicostatistical techniques. It was used to calculate the percentage of kinship between the two languages and also glotochronological techniques to calculate the separation time between Acehnese and Tamiang Malay language. The results of the study found that the percentage of kinship between Acehnese and Tamiang Malay is quite high, which is as much as 39%. From the results of calculations using glotochronology techniques that have been carried out, it is found that the separation period between Acehnese and Tamiang Malay language is as far as 1,616 years.

Keywords: Aceh language, Tamiang Malay language, Glotochronology

ABSTRAK

Penelitian ini bertujuan untuk mengetahui persentase kekerabatan yang ada antara bahasa Aceh dan bahasa Melayu Tamiang serta untuk mengetaui masa perpisahan kedua bahasa tersebut. Penelitian ini dilakukan dengan menggunakan metode kuantitatif di mana data dalam penelitian ini bersifat statistik. Teknik yang digunakan dalam menganalisis data ialah teknik leksikostatistik untuk menghitung persentase kekerabatan antar kedua bahasa dan juga teknik glotokronologi guna menghitung waktu pisah antar kedua bahasa. Adapun dari hasil penelitian didapati bahwa persentase kekerabatan antara bahasa Aceh dan Melayu Tamiang cukup tinggi, yaitu sebanyak 39%. Angka tersebut menunjukkan bahwa kekerabatan kedua bahasa itu tergolong ke dalam kelompok keluarga (family) Dari hasil penghitungan menggunakan teknik glotokronologi yang telah dilakukakan maka didapati hasil bahwa masa pisah antara bahasa Aceh dan Melayu Tamiang adalah sejauh 1.616 tahun.

Kata kunci: Bahasa Aceh, Bahasa Melayu Tamiang, Glotokronologi

1. Introduction

Geographically, Aceh language (AL) and Tamiang Malay language (TML) are close together and both are regional languages in Aceh province. Not only adjacent but indeed the Tamiang Malay language which is the language of the Aceh Tamiang district is directly adjacent to the Aceh language in East Aceh. Even in Langsa City itself (which is geographically located between East Aceh and Aceh Tamiang) the use of these two languages has mixed and influenced each other. The geographical proximity of two or more languages can be one of the strong reasons for conducting research related to language kinship [1].

Language kinship itself relates to the concept of relationships or similarities between different languages. Language kinship is often identified through similarities in grammatical structure, vocabulary, or phonology between two languages [2][3]. Language kinship can be found by using a comparative historical linguistic perspective. Language kinship is usually seen from the similarity of elements from the vocabularies of the languages being compared. Comparisons between these languages are still related to the techniques and methods of finding language kinship in the field of comparative historical linguistics [4].

The characteristics of language kinship between AL and TML can be seen from some of the same vocabularies. For example, the word [ginger] which in TML is [halia] and AL [halia], as well as the word [gold] which in TML is [meh] and AL [meuh], and the word [sawah] which in both AL and TML is called

[blang]. This indicates that there is indeed a kinship between AL and TML. Therefore, the author is interested in finding the percentage of kinship and separation distance that exists between the two languages.

In researching the kinship between Aceh language and Tamiang Malay language, the author refers to several studies that have been conducted previously. The kinship of the Aceh language and the Malay language (Malaysia) using the lexicostatistical method where this research aims to see the percentage of kinship between the Aceh language and the Malaysian Malay language [5]. Then there is research by [3] on the kinship of Sundanese and the new Javanese language. This research aims to see the vocabulary that is related by referring to the 200 Swadesh word list. Furthermore, there is also research by on the kinship of Selayar and Makassar languages. Different from the two studies mentioned earlier, the research not only looked at the percentage of language kinship but also looked at the separation distance between the two languages which was compared with the glotochronology method. Then finally, there is also a study by [5] which also examines language kinship and the distance between the languages being compared. Different from the two previous studies, in this study Wartono compared not only two but four languages at once, namely the Toba dialect of the Batak language, Simalungun language, Mandailing language, and Karo language.

2. Method
In conducting this research the authors used quantitative research methods [6][7]. Quantitative is research with a positivist foundation that aims to examine certain populations or samples. Data analysis in quantitative is statistical to describe and test predetermined hypotheses [8]. In the data collection itself, the author refers to 200 Swadesh vocabularies in the Aceh language and Tamiang Malay language.

Data analysis in this study was carried out using lexicostatistics and glotochronology techniques. Lexicostatistics is a language grouping method carried out by calculating the percentage of cognate devices [9]. The vocabulary on which the calculation is based is the basic vocabulary. In lexicostatistical calculations, words that have similarities in terms of phonetics or morphology will be considered as related words or known as cognates. It is through these cognate words that the separation time of the proton language or the age of the language is calculated [10][11]. This technique is used by researchers to calculate the percentage of language kinship between Acehnese and Tamiang Malay. The lexicostatistical formula used to analyze the data is as follows:

$c = k/n \times 100\%$
c = cognate (percentage of language kinship)
k = number of words that are related
n = number of words compared

Furthermore, the author also used the glotochronology technique in analyzing the data. [8] states that glotochronology is a technique in dialectology that attempts to organize groupings by prioritizing the calculation of time or the calculation of the age of kin languages. In this case, the age of the language is not calculated absolutely from a certain year but is calculated in general using units of thousands of years. This technique the author uses to find the calculation of the separation time between Acehnese and Tamiang Malay. The glotochronology formula used to analyze the data is as follows:

$t = \text{Log}c/2 \text{ Log } r$
t = time depth (separation time)
r = retention (vocabulary durability)
c = cognate (percentage of word relatives)

3. Result and Discussion
Aceh language and Tamiang Malay language Kinship Pairs
The following is a list of Aceh language and Tamiang Malay language vocabularies that are referring to Swadesh's list of 200 words.

Table 1. List of cognate pairs between AL and TML in terms of Swadesh's 200-word list

No.	PAN	Gloss	AL	TML
1	* ʻabu	Abu	Abee	Abu
2	* anak	Anak	Aneuk	Anak
3	* aŋin	Angin	Angen	Angin
4	* qasap	Asap	Asap	Asap

5	* avan	Awan	Awan	Awan
6	* bapa'	Bapak	Ayah	Ayah
7	* baRu	Baru	Baro	baRu
8	* bat'ah	Basah	Bulut	Bulut
9	* batu'	Batu	Bate	Batu
10	* 'aŋen	Piker	Pikee	piker
11	* bintaŋ	bintang	Bintang	Bintang
12	* bu'ah	Buah	Boh	Buah
13	* bulan	Bulan	Buleun	Bulan
14	* bulu'	Bulu	Bulee	Bulu
15	* buŋa	Bunga	Bungong	Bunga
16	* danaw	Danau	Danau	Dano
17	* dayah	Darah	Darah	daRah
18	* da'un	Daun	On	Daon
19	* dabuk	Debu	Abee	Abu
20	* di	Di	I	Di
21	* dalem	Dalam	Lam	Dalam
22	* duwa	Dua	Dua	Dua
23	* dukduk	Duduk	Duek	Dudok
24	* 'ikuR	Ekor	Iku	ikoR
25	* hati	Hati	Hatee	Hati
26	* ?iduŋ	hidung	Idoeng	Idung
27	* hudip	Hidup	Udep	Hidup
28	* gizau	Hijau	Ijoe	Ijo
29	* 'i(n)t|m	Hitam	Itam	Itam
30	* kira	Hitung	Bileung	Bilang
31	* hujan	Hujan	Ujeun	Ujan
32	* itu(h)	Itu	Nyan	Yan
33	* jahat	Jahat	Jeuheut	Jahat
34	*zantuN	jantung	Jantong	Jantong
35	* zaRum	Jarum	Jarom	Jarom
36	* jawuh	Jauh	Jioh	Jauh
37	* kambiŋ	kambing	Kameng	Kambing
38	* kaki'	Kaki	Aki	Kaki
39	* kayu'	Kayu	Kayee	Kayu
40	* kilap	Kilat	Kilat	Kilat
41	* kulit	Kulit	Kulit	Kulit
42	* kuniŋ	kuning	Kuneng	Kuning
43	* lain	Lain	Laen	Laen
44	* laŋit	Langit	Langet	Langik
45	* la'ud	Laut	Laot	Laot
46	* bi(n)daŋ	Lebar	Luwah	Lueh
47	* lima	Lima	Limong	Limo
48	* dilah	Lidah	Lidah	Lidah
49	* malem	Malam	Malam	Malam
50	* malu	Malu	Malee	Malu
51	* mata	Mata	Mata	Mate
52	* matay	Mati	Matee	Mati
53	* b|lah	Belah	Blah	Belah
54	* buka'	Buka	Buka	Buka
55	* pilih	Pilih	Pileh	Pileh
56	* ciyum	Cium	Com	Cium
57	* maliŋ	Curi	Cue	Curi
58	* deŋar	dengar	Deungo	Dena
59	* tembak	tembak	Timbak	tembak
60	* 'aliy	Alir	Ilee	Ale
61	* iket	Ikat	Ikat	Ikat
61	*meRa	Merah	Mirah	miRah
62	* namuk	nyamuk	Jamok	Nyamok
63	* pand'aŋ	panjang	Panyang	Panjang
64	* (t)ijan	perut	Prut	Perot
65	*pitu	tujuh	Tujoh	Tujuh
66	* putih	putih	Puteh	Putih
67	* ɣumah	rumah	Rumoh	Rumah
68	*sakit	sakit	Saket	Sakik
69	* laki'	suami	Lakoe	Laki
70	* tahu'	tahu	Tupueu	Tau
71	* tahun	tahun	Thon	Tahun
72	* tazem	tajam	Tajam	Tajam
73	* tali'	tali	Taloe	Tali
74	* tanah	tanah	Tanoh	Tanah

75	* t|b|l	tebal	Teubai	Tebae
76	* tikus	tikus	Tikoh	tikus
77	* tuha'	tua	Tuha	Tuhe
78	* tulaŋ	tulang	Tuleung	Tulang
79	* nipa	ular	Uleu	uloR

The table above shows that 79 related AL and TML vocabularies were found. The 79 pairs of relatives are obtained from several stages of testing, namely (a) if the pair is identical; (b) has phonemic correspondence; (c) has phonetic similarity; (d) has one different phoneme.

Percentage of Kinship Level between Acehnese Language and Tamiang Malay Language
After finding the number of word pairs that are related between BA and BMT, the next step is to determine the percentage of kinship using lexicostatistical theory. The following is the percentage of kinship between AL and TML obtained:

C=K/G x 100%
C = cognates or related words
K = number of cognate vocabulary
G = number of gloss

From the 200 vocabularies (number of gloss) analyzed, 79 vocabularies were found to be cognate pairs. So by referring to the lexicostatistical formula above, the following percentage is obtained:

C =K/G x 100%
C =79/200 x 100%
= 39%

From the above results and referring to the following language grouping table (Swadesh), it can be concluded that Aceh language and Tamiang Malay language is belong to the family group, which means that both have a fairly high level of kinship.

Table 2: Language kinship groupings

Group	Split Time	Kinship Level
Language	0 - 500 years	81 – 100%
Family	500 - 2,500 years	36 – 81%
Microphylum	5,000 - 7,500 years	4 – 12%
Mesophylum	7,500 - 10,000 years	1 – 4%
Macrophylum	Above 10,000 years	1%

Separation period of Aceh language and Tamiang Malay language
The calculation of the separation period between languages can only be done after the percentage of language kinship is obtained. The calculation of the separation period refers to the glotochronology theory with the following formula:

$$t = \frac{\log C}{2 \log r}$$

t=logC/ (2 logr)
t: separation time
C: Kinship percentage
r: Constant or index (80.5 rounded to 81).

After previously found the percentage of kinship between Aceh language and Tamiang Malay language as much as 39%, the estimated separation period can be seen as follows:

$$t = \frac{\log C}{2 \log r}$$

$$t = \frac{\log 39\%}{2 (\log 81\%)}$$

$$t = \frac{-0{,}408}{-0{,}183}$$

$$t = 0{,}591$$

To find out the separation period, the result of t is multiplied by 1000, is:
Separation period = 0.591 x 1000
$$= 591$$

Separation time = 2,024 (current year) - 591 (separation period)
$$= 1.433$$

So it can be estimated that the separation period between Aceh language and Tamiang Malay language is as far as 591 years and is estimated to separate in 1,433 A.D. Furthermore, it cannot be said that the above results are not entirely accurate. The separation of two or more languages is not possible in a short period of time and definitely separated in a certain year. Of course, language separation occurs slowly and occurs over a short period of time. Therefore, it is also necessary to calculate the period of error with the following formula:

$$S = \frac{\sqrt{C}(1 - C)}{n}$$

     S : Period of Error
     C : Kinship percentage
     N : number of vocabularies compared

This error term calculation is used to reveal how long the period of separation is between the two languages being compared. Furthermore, the calculation of the error rate between BA and BMT can be seen as follows:

$$S = \frac{\sqrt{C}(1 - C)}{n}$$

$$S = \frac{\sqrt{0,39}(1 - 0,39)}{200}$$

$$S = \frac{\sqrt{0,39}(0,61)}{200}$$

$$S = \frac{\sqrt{0,847}}{200}$$

$$S = \frac{0,92}{200}$$

$$S = 0,0046$$

After the above calculation, the S value is summed up again with the percentage of kinship (C) so that a new C value is obtained, namely:
$$C = 0,0046 + 0,39$$
$$C = 0,394$$

After that, the separation period is once again calculated using the previous glotochronology formula so that the following results are obtained:

$$t = \frac{\log C}{2 \log r}$$

$$t = \frac{\log 0,394}{2 \log r 81\%}$$

$$t = \frac{-0,404}{-0,183}$$

$$t = 2,207$$

The same as before, to find out the separation period, the result of t is multiplied by 1000, which is 2,207. In the final calculation, the new t value (2.207) is subtracted from the old t value (1.433)
2.207 - 1.433 = 1.616 years

In accordance with table 2, it can be said that Aceh language and Tamiang Malay language are included in the family group, which has a range of separation times of 500 - 2,500 years.

4. Conclusion

From the results of the research that has been done, it can be concluded Aceh language (AL) and Tamiang Malay language TML) belong to the family language group. It can be seen from the high percentage of kinship that exists in the two languages, which is 39%. The 39% figure is obtained by first determining the list of kin pairs that refer to the list of 200 Swadesh words from the two languages studied. After the number of kin pairs was obtained, calculations were made using lexicostatistical techniques.

From the results of calculations using glottochronology techniques that have been carried out, it can be concluded that the separation period between Aceh language and Tamiang Malay language is as far as 1,616 years. But it can be said that the above results are not entirely accurate. The separation of two or more languages is not possible in a short period and is definitely separated in a certain year.

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