

CHAPTER 6

PROTO KOHO-MAA

6.0 Introduction

Having constructed the proto phonemes in chapter 5, this chapter describes the characteristics of Proto Koho-Maa. Phonological features of this proto language are outlined in this chapter. This chapter also discusses the relationship between Koho and Maa varieties based on shared phonological rules found in chapter 5.

6.1 Proto Koho-Maa

The ancestral language of Koho and Maa varieties is reconstructed on the basis of data from seven representative varieties: Maa Dagui, Maa Chop, Maa Tadung, Koho Cil, Koho Lach, Koho Nop and Koho Sre. The reconstructed forms allow us to not only derive Proto Koho-Maa, but also provide insight into the relationships between the parent language and daughter speech varieties.

The following sections will present features of the Proto Koho-Maa, such as the consonants, vowels, syllable template, and phonotactic constraints.

6.1.1 Consonants

From the phonological reconstruction in chapter 5, the inventory of consonants in the proto language is summarized in Table 148.

	Labial	Alveolar	Palatal	Velar	Glottal
Voiceless plosive	*p	*t	*c	*k	*ʔ
Voiced plosive	*b	*d	*j	*g	
Voiced implosive	*ɓ	*ɗ			
Nasal	*m	*n	*ɲ	*ŋ	
Trill		*r			
Voiceless fricative		*s			*h
Approximant	*w		*j		
Voiced lateral approximant		*l			

Table 148. The Proto consonants

The proto language had 21 consonants. These proto consonants have been preserved in all the descendant speech varieties.

6.1.2 Vowels

The vowel inventory in the Proto language of Koho and Maa varieties is shown in Table 149.

	Short			Long		
	Front	Central	Back	Front	Central	Back
High	*i		*u	*i:		*u:
Mid	*e	*ə	*o	*e:	*ə:	*o:
Low		*a	*ɔ		*a:	*ɔ:

Table 149. The Proto vowels

There were seven cardinal vowels in the ancestral language from which all Koho and Maa varieties have been descended. There were also two proto diphthongs *iə, and *uə in the ancestral language. This vowel inventory is quite symmetrical with a seven-vowel system.

6.1.3 Syllable Structure

The Koho and Maa varieties are sesquisyllabic, consistent with the nature of Mon-Khmer languages. Sesquisyllabic words have a main syllable (sometimes called

strong) and a presyllable (variously called minor, weak, or reduced syllables). The main syllable is stressed while the presyllable is unstressed. The following sections discuss the main and presyllables in the proto language.

6.1.3.1 Presyllable

Presyllables always precede and are bound to a main syllable. The presyllable structure has three components. The first component is the initial consonant C_{p1} . The second component is the mid central unrounded vowel /ə/ which is sometimes called a neutral vowel, and the third component is an optional final consonant (C_{p2}) which is restricted to /r/, /l/, /m/ or /n/. The presyllable template is therefore, $C_{p1}\text{ə}(C_{p2})$. The following Table 150 shows the segment combinations of the presyllables.

Initial Consonant	Vowel	Final Consonant			
		r	l	n	m
*ʔ	ə	-	-	-	-
*p	ə	-	+	+	-
*t	ə	-	-	+	+
*c	ə	-	-	-	-
*k	ə	-	+	+	+
*b	ə	-	-	+	-
*j	ə	-	-	-	-
*g	ə	-	-	-	-
*r	ə	-	-	-	-
*m	ə	-	-	-	-
*n	ə	-	-	-	-
*ɲ	ə	-	-	-	-
*ŋ	ə	-	-	-	-
*s	ə	+	-	-	-
*l	ə	-	-	-	-

Table 150. Proto presyllable segment combinations

In Table 150 the hyphens indicate that the combination is not allowed, while the pluses indicate the combination is permitted.

The inventory of the proto presyllables indicated by the above segment combinations is as follows:

	Labial	Alveolar	Palatal	Velar	Glottal
Voiceless plosive	*pən	*təm/*tən		*kəm/*kən	*ʔə
Voiceless plosive	*pəl			*kəl	
Voiceless fricative		*sər			
Voiceless plosive		*tə			*ʔə
Voiced plosive	*bə		*jə	*gə	
Trill		*rə			
Nasal	*mə	*nə	*ɲə	*ŋə	
Voiceless fricative		*sə			
Voiced lateral approximant		*lə			

Table 151. Inventory of the proto presyllable

The inventory of the Proto Koho-Maa presyllables differs somewhat from that of the proto presyllables suggested by Sidwell (2000) for Proto South Bahnaric. Proto Koho-Maa has some presyllables such as *pən, *pəl, *təm, *tən, *jə, and *ŋə which Sidwell does not posit for Proto South Bahnaric. Not surprisingly, other presyllables such as *kər, *gər, *pə, *də, *kə and *hə are found in Proto South Bahnaric but not in Proto Koho-Maa.

6.1.3.2 Main Syllable

The schematic main syllable template for Proto Koho-Maa varieties is composed of an obligatory initial consonant C_1 , and an optional medial consonant (C_2), an obligatory vowel V_1 or an optional diphthong $V_1(V_2)$ and a final optional consonant (C_3). The main syllable template thus appears, as follows:

$$C_1(C_2)V_1(V_2)(C_3)$$

Symbols in parentheses are optional elements while those without parentheses are obligatory. Reconstructed syllable types are as follows: CV, CVC, CCV, CVV, CCVV, CVVC, and CCVVC.

6.1.4 Phonotactics

All consonants are allowed in the onset position C_1 , while the coda position (C_3) does not permit voiced obstruent consonants. The following initial clusters $C_1(C_2)$ are allowed: *ph, *pr, *pl, *br, *bl, *th, *tr, *ch, *jr, *kh, *kr, *kl, *gl, and *sr. These combinations are captured in the following Table 152:

*ph	*th	*ch	*kh
*pl			*kl
*pr	*tr		*pr
*bl			*gl
*br		*jr	
	*sr		

Table 152. Inventory of initial clusters

The vocalic component is either a simple vowel V_1 or a diphthong $V_1(V_2)$. All vowels are allowed in the V_1 position whereas (V_2) is restricted to the mid central vowel /ə/ in the diphthongs *iə and *uə. There are no final clusters in Proto Koho-Maa.

6.2 Relationship of Koho and Maa Varieties

This section of the thesis will consider a number of different aspects of the data presented in chapter 5 to determine the relationship between Koho and Maa varieties. Based on these considerations, a basic subgrouping of the varieties will be proposed.

6.2.1 Phonological Rules

This thesis considers phonological rules which describe how the speech varieties have diverged from the proto language. The relationship between Koho and Maa varieties can be pictured as shared retentions or shared innovations from the proto language (Crowley 1992). The varieties that have largely retained the phonological features of the proto language are considered conservative, while the varieties that have lost the phonological features of the proto language are considered innovative.

Based on shared phonological rules, a Stammbaum can be constructed. There are 43 rules from sound changes in the main syllable derived from the reconstruction in chapter 5. Only the phonological rules in the main syllable were counted, because the sound changes in the presyllable are not as reliable as those in the main syllable. A sum of all unique and shared phonological rules is provided in Table 153. The first column to the left gives the numbers and names of the phonological rules. The columns under the language names are marked by [x] when the rule applies in the speech variety shown on the top of the column.

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Number and Name of Rules	Speech varieties applying the respective rules						
	Maa Dagui	Maa Chop	Maa Tadung	Koho Cil	Koho Lach	Koho Nop	Koho Sre
Rule 1. Vowel Lowering					x		
Rule 2. Vowel Centralization				x			
Rule 3. Vowel Raising	x	x	x			x	x
Rule 4. Vowel Lowering					x		
Rule 5. Vowel Lowering (1&4)					x		
Rule 6. Vowel Centralization				x			
Rule 7. Vowel Centralization (2&6)				x			
Rule 8. Vowel Lengthening	x					x	
Rule 9. Vowel Raising	x	x	x			x	x
Rule 10. Vowel Raising (3&9)	x	x	x			x	x
Rule 11. Vowel Raising &Lengthening	x					x	
Rule 12. Vowel Splitting				x			
Rule 13. Vowel Lengthening	x					x	
Rule 14. Vowel Lengthening (8,11&13)	x					x	
Rule 15. Vowel Shortening					x		
Rule 16. Vowel Shortening				x			
Rule 17. Vowel Lowering					x		
Rule 18. Vowel Shortening				x			
Rule 19. Vowel Shortening					x		
Rule 20. Vowel Shortening (15&19)					x		
Rule 21. Vowel Shortening				x			
Rule 22. Vowel Shortening (16&21)				x			
Rule 23. Vowel Raising		x					
Rule 24. Vowel Raising				x			
Rule 25. Vowel Diphthongization					x		
Rule 26. Vowel Splitting				x			
Rule 27. Vowel Splitting (12&26)				x			
Rule 28. Vowel Fronting		x		x	x		
Rule 29. Vowel Lowering						x	x
Rule 30. Vowel Monothongization				x			
Rule 31. Vowel Fronting		x			x		
Rule 32. Vowel Lowering						x	x
Rule 33. Vowel Fronting (28&31)		x		x	x		
Rule 34. Vowel Lowering (29&32)						x	x
Rule 35. Lenition				x	x		
Rule 36. Backing				x	x		
Rule 37. Coalescence				x			
Rule 38. Coalescence					x		
Rule 39. Coalescence				x			
Rule 40. Coalescence					x		
Rule 41. Coalescence				x			
Rule 42. Coalescence					x		
Rule 43. Spirantization				x			

Table 153. Summary of the phonological rules

The italicized rules are summarized and generalized in subsequent bold rules.

By counting the phonological rules from the reconstruction section, it can be seen that Koho Cil is the most innovative variety with eleven rules and Koho Lach is the second most innovative variety with eight rules while Maa Tadung is the most conservative with one rule. It means both Koho Cil and Koho Lach have diverged from the proto language more than Koho Sre, Koho Nop, and the Maa varieties.

A tree can be formed from the shared rules in Table 152 by calculating the Jaccardian coefficient for a pair of columns, according to the formula (Grimes 1995:75):

$$\text{Jaccard } [i, j] = a/(a+b+c),$$

where “i” and “j” are different speech varieties, “a” is the number of phonological rules shared by speech varieties “i” and “j,” “b” is the number of rules in “i” that are not in “j,” and “c” is the number of rules in “j” that are not in “i.” Basically, the Jaccardian coefficient divides the actual number of shared rules by the total number of meaningful cases.⁸ The result of the Jaccardian coefficient calculation is shown in Table 154.

	Maa Dagui	Maa Chop	Maa Tadung	Koho Cil	Koho Lach	Koho Nop
Maa Chop	0.25					
Maa Tadung	0.5	0.33333				
Koho Cil	0	0.07143	0			
Koho Lach	0	0.09091	0	0.16667		
Koho Nop	0.66667	0.2	0.33333	0	0	
Koho Sre	0.33333	0.25	0.5	0	0	0.66667

Table 154. Results of the Jaccardian coefficient calculations

⁸ The total number of meaningful cases does not include the cases when a rule is not applicable to i and j varieties.

Table 155 is the result after trimming the row headings and diagonal values and converting to percentages from Table 154.

Koho Cil						
16.7	Koho Lach					
0.0	0.0	Koho Sre				
0.0	0.0	50.0	Maa Tadung			
7.1	9.1	25.0	33.3	Maa Chop		
0.0	0.0	33.3	50.0	25.0	Maa Dagui	
0.0	0.0	66.7	33.3	20.0	66.7	Koho Nop

Table 155. Jaccard coefficient of similarity value

The Jaccardian coefficients were run using the UPGMA (Unweighted Paired Group Method with Arithmetic Average, or average link method) as shown in Table 155:

-- Analysis: UPGMA --Correlation (r) = 0.953	
66.7	Maa Dagui, Koho Nop
50.0	Maa Dagui, Koho Nop, Koho Sre
44.4	Maa Dagui, Koho Nop, Koho Sre, Maa Tadung
25.8	Maa Dagui, Koho Nop, Koho Sre, Maa Tadung, Maa Chop
16.7	Koho Cil, Koho Lach
1.6	Maa Dagui, Koho Nop, Koho Sre, Maa Tadung, Maa Chop, Koho Cil, Koho Lach

Table 156. UPGMA grouping by Jaccard coefficient values for shared phonological rules.

The language tree generated by this average-link clustering is shown in Figure 9.

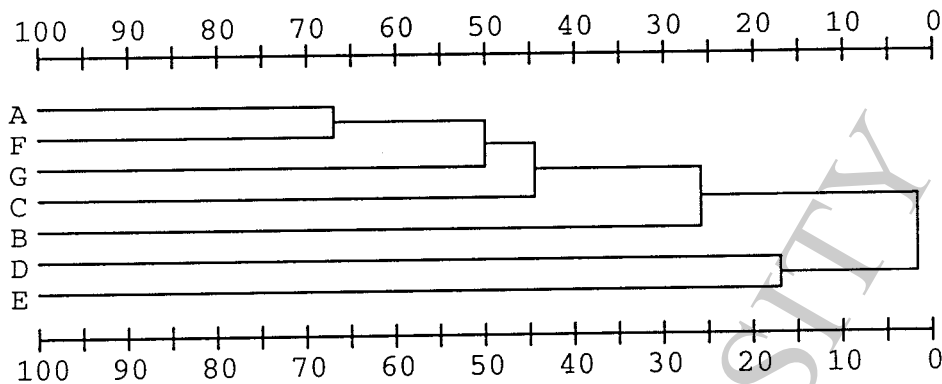


Figure 12. Koho and Maa language tree based on shared phonological changes

Key: A = Maa Dagui, B = Maa Chop, C = Maa Tadung, D = Koho Cil, E = Koho Lach, F = Koho Nop, G = Koho Sre.

From Figure 12, it is particularly interesting that Maa Dagui is closer to Koho Nop than any of the other Koho groups and actually this is the closest grouping of any of the varieties. At the next higher level they group with Koho Sre followed by Maa Tadung and at a much lower level by Maa Chop. It can be seen that Koho Cil and Koho Lach stand apart in a separate group at a very low threshold. This would seem to argue against the notion of the Maa groups being independent from the Koho groups. The Koho group itself is not very cohesive; it is fractured into two different groups and some of what has been called Koho before looks fairly independent. Maybe these two speech varieties, Koho Cil and Koho Lach, should be classified as something other than Koho.

6.2.2 Koho and Maa Subgrouping

The subgrouping of Koho and Maa based on shared phonological rules shows that there are two main groups which this thesis terms as the Northern group which includes Koho Cil and Koho Lach, and the Southern group which is comprised of Maa Dagui, Koho Nop, Koho Sre, Maa Tadung, and Maa Chop. Note that the term Northern has been previously used by Tạ Văn Thông (1988a), however, the term Southern includes groups that Tạ Văn Thông labeled as Central and Southern. This subgrouping is illustrated in Figure 13.

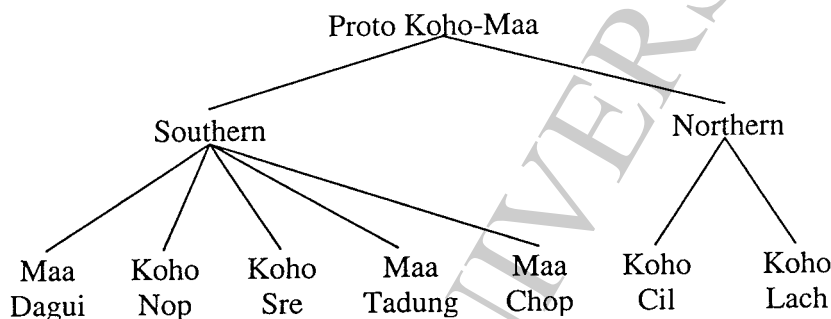


Figure 13. Koho and Maa Stammbaum based on shared phonological rules

Figure 13 shows the phonological relationship between Koho and Maa speech varieties, and Proto Koho-Maa.

The subgrouping based on shared phonological rules is rather interesting, because this subgrouping is somewhat consistent with the lexicostatistic subgrouping presented in Chapter 4. In the lexicostatistic subgrouping Koho Cil and Koho Lach tend to stand in one group with the rest of the speech varieties in another group. This subgrouping is also consistent with the subgrouping suggested by Tạ Văn Thông (1988a), with Koho Cil and Koho Lach separate from the other varieties.

However, the lexicostatistic subgrouping and the phonological subgrouping have some differences. The lexicostatistic grouping shows that Maa Chop and Koho Sre are the most lexically related while the phonological reconstruction shows Maa Dagui and Koho Nop are the most phonologically related. This would suggest that Koho and Maa speech varieties are not distantly related with each other. Based on lexical and phonological comparison this thesis suggests that Koho and Maa are best considered as closely related varieties genetically, although there are considerable phonological and lexical differences particularly among Koho varieties.

6.3 Summary

This chapter discussed Proto Koho-Maa from which all speech varieties of Koho and Maa have descended. The proto consonant inventory is fairly symmetrical with 21 consonants. The initial clusters show some asymmetry. The vowel inventory is rather symmetric with a seven-vowel system. The proto word template is generalized as $*(C_{p1}\text{ə})(C_{p2})C_1(C_2)V_1(V_2)(C_3)$.

The resulting analysis from shared phonological rules suggests that Koho and Maa should be considered as closely related varieties. The results also identify two subgroups: Northern which includes Koho Cil and Koho Lach, and the Southern group which is comprised the Maa varieties, Koho Nop, and Koho Sre. This subgrouping is consistent with the geographic location of these groups since the Koho Cil and Koho Lach inhabit areas to the north of Lam Dong Province, while the other groups are located in the south of the province.