A Preliminary Comparison of Kamano-Yagaria*

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1 Introduction

The group of dialects known to linguists as Kamano, Yate and Yagaria (henceforth K-Y) occupy a relatively small area (approximately 30 by 40 kms, see Map 1), in mountainous terrain (1500-2000 metres) just south of Goroka in Papua New Guinea. Here an estimated 90,000 people express a great amount of language variation. Three of the dialects have been closely studied (the Move dialect of Yagaria by Renck (1975, 1977), the Huva dialect of Yagaria by Haiman (1980), and an unspecified dialect of Kamano by Payne and Drew (n.d., 1966)). K-Y belongs to the Gorokan sub-family of the Eastern Highlands family, the other sub-family being Kainantu.

Foley (1986:246-56) lists the membership of these sub-families as follows:

Gorokan:

Fore	Siane
Gimi	Yabiyufa
Kamano-Yagaria	Benabena
Gende	Gahuku-Asaro

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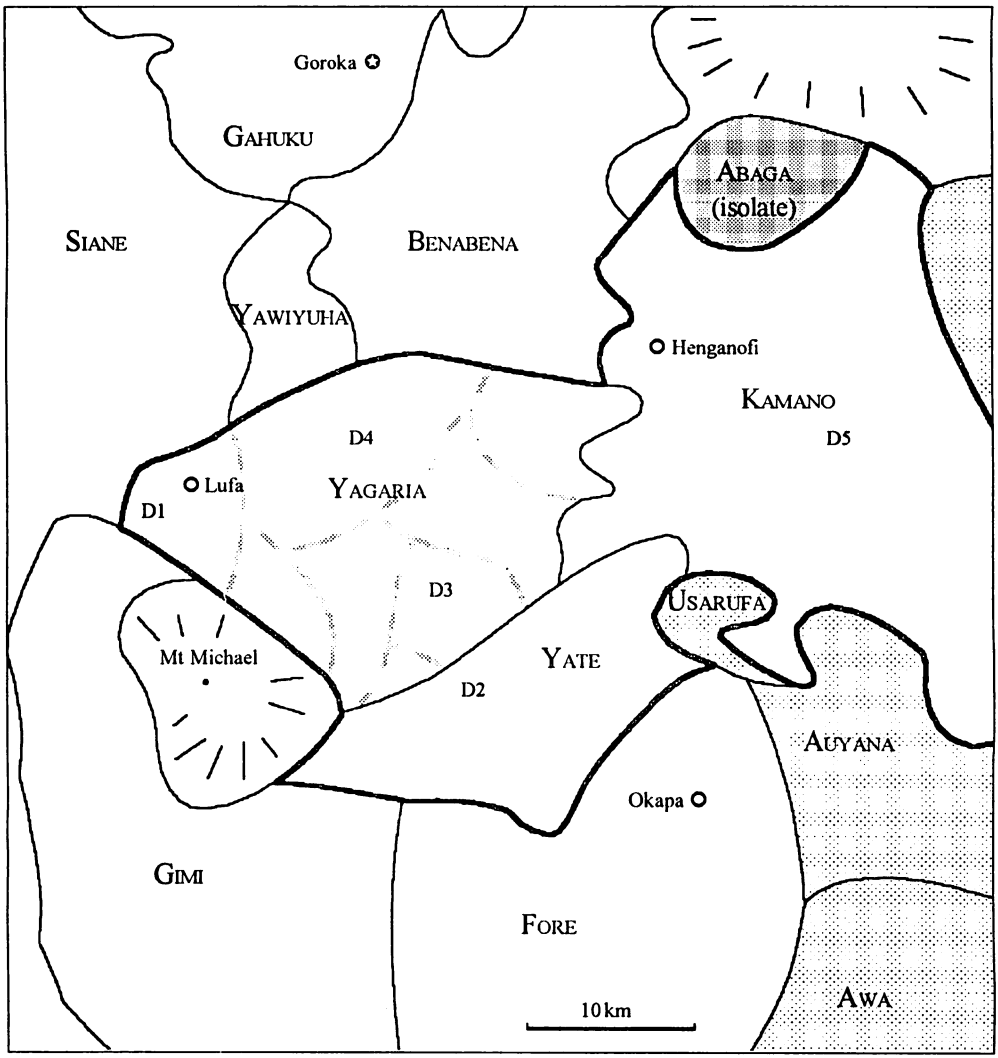
Map code	Name	Village	Dialect
D1	Joe Ormo	Kiovi	Huva
D2	Sidney Higugipa	Nupagimi	Yate
D3	George Inave	Havi	Move
D4	Richard Hamena	Litipinaga	Kami
D5	Korak Korabes Jaonta	Koruvani	Kafe

Research to date has included analysis of twelve idiolects, distributed as follows:

Huva:	2	Move: 2	Yate: 2	Kafe:	1
Hila:	1	Dagenava: 1	Kami: 2	Kuluka:	1



MAP 1: KAMANO-YAGARIA AND NEIGHBOURING LANGUAGES

Kainantu:

Awa	Tairora
Auyana	Usarufa
Gadsup	

The dialect names used in the literature for K-Y are:

a. Kamano, Kafe
b. Huva, Hila, Kamate, Filigano, Move, Kami, Oligutili, Kotomi, Dagenava
c. Yate, Ke'yagana, Kanite

Speaking of Gorokan, Foley comments (1986: 236-7)

> "Dialect differentiation in a number of these languages, especially the larger ones, is very great, and this creates problems in classification. The problem is essentially caused by dialect chain. For example, in Kamano-Yagaria the dialects at the extreme ends of the chain clearly constitute different languages, but dialects in the middle show about equal relationship to both ends of the chain. Hence there is no non-arbitrary way to draw a line separating the two languages (see Wurm and Laycock 1961 for further discussion of this problem). Hua is one of the dialects in the Yagaria end of this chain."

Jernudd (1968) has shown that an adequate dialect study involves the following:

i. analysis of the linguistic differences
ii. testing of mutual-intelligibility
iii. assessment of speakers' attitudes.

While Foley stresses (ii), Jernudd points out that (iii) is probably the most important factor. This paper will concentrate on (i), the linguistic differences which have not been adequately specified in previous descriptions, partly because these were not aiming at systematic comparison. A future paper (Ford: in preparation) will provide a more comprehensive statement of the relationship between the dialects.

2 A Comparison Based on Previous Data

A comparison of the forms in Table 1, which are drawn from the published material cited above and expanded to include Kami and Yate equivalents, is not revealing.

TABLE 1: PRELIMINARY K-Y COMPARATIVE SERIES

Huva Kiovi D1	Yate Nupagimi D2	Move Havi D3	Kami Litipinaga D4	Kafe Koruvani D5	[Dialect] [Village]
apa	*hapa*	*hapa*	*hapa*	*hapa*	mud
kire?	*kile*	*kile*	*kile*	*kire?*	corn cob
kori	*koli*	*koli*	*koli*	*kore?*	scared
hoga	*hoga*	*hoga*	*hoga*	*hoga*	left
kenu	*kenu*	*kenu?*	*kenu*	*kenu?*	grasshopper
hni?	*hni*	*hani?*	*hani?*	*həni*	night
mna	*nma*	*nama*	*nama*	*nəma*	bird

All of these forms are identical or nearly so. There is a correspondence between Huva/Kafe /r/ and Yate/Move/Kami /l/ in 'corn cob' and 'scared', and one between Huva ø and Yate/Move/Kami/Kafe /h/ in 'mud'. There are also correspondences between /?/ and ø, but they are not consistent.

One other correspondence evident in Table 1 is between Huva/Yate ø, Move/Kami /a/, and Kafe /ə/ in 'night' and 'bird'. This correspondence is limited to lexical items in which a non-final vowel in the Move/Kami forms is /a/ or identical to the following vowel. Additional examples, including some involving the deletion of more than one vowel, are given in Table 2. (For simplicity, only Huva and Move forms are contrasted.)

TABLE 2: CORRESPONDENCE SETS–$V \sim ø$

Huva	Move	
katva	*katava*	banana sp.
ktrupe	*katalupe*	bird sp.
ktre	*katalena*	chicken comb
hgaita	*kahaita*	cowrie
ftre	*fatele*	carefully
fteftu huo	*fetefetu huo*	carve hole (imperative)
hvio	*havio*	hear
bsubsu fuo	*busubusu huo*	lick/suck
hkro huo	*hakalo*	pierce
ygau fuo	*yagau huo*	throw
kffaio	*kafafaio*	hollow

A deletion/reduction analysis is supported by the fact that the vowel in the Move form is unpredictable–it is sometimes /a/ and is sometimes identical with the following vowel. An

insertion analysis, on the other hand, is supported by the fact that in some forms (e.g. 'mud' in Table 1 and 'banana sp.' in Table 2) /a/ is present in all dialects, including Yate/Move/Kami.

There is a synchronic process in Move and Kami which is relevant to the discussion of diachronic insertion versus deletion. Although phonemic consonant clusters do not exist in either language, phonetic consonant clusters do. These clusters are the result of a process of Vowel Deletion which is optional in the sense that it usually operates in rapid speech, but may be suspended, for example for emphasis. Vowel Deletion makes crucial reference to the fact that K-Y is a lexical tone language. K-Y is a lexical tone language on the following bases:

a. as in every language, each syllable bears a tone (or is spoken at a particular pitch);
b. again, as in all languages, there are at least two different tones (some K-Y dialects have two tones, High and Low; others have three, Extra-high, High and Low);
c. while some dialects prohibit certain tonal combinations, generally any syllable can bear any tone (which is what makes tone lexically distinctive).

The following are examples of Vowel Deletion from Move including the tonal information.[1]

TABLE 3: VOWEL DELETION IN MOVE

Slow	Fast	
fìlígànò	*flígànò*	'Filigano'
dàhánèká	*dhánèká*	'they're looking for me'
yàhaí	*yhaí*	'turn round'
yàhaíʔ	*yhaíʔ*	'one way then the other'
kàhávùdá	*khávùdá*	'tree bark type'
fùlúfùlú	*flúflú*	'quiet, calm'

The consonant clusters can be accounted for by the following rule of Vowel Deletion.

Vowel Deletion (Move/Kami)

$$\grave{V}_1 \rightarrow \emptyset \ / \ C \_\_ \left\{ \begin{matrix} h\acute{V} \\ C\acute{V}_1 \end{matrix} \right\}$$

(A non-initial Low tone vowel is deleted preceding a High tone vowel if they are separated by /h/ or if they are identical.)

The alternations accounted for by Vowel Deletion must be due to a process of deletion, not insertion, since the vowel quality in the slow speech form is unpredictable before /h/.

Since synchronic Vowel Deletion is conditioned by the tone of the vowels, it is reasonable to hypothesise that diachronic vowel deletion in Move/Kami and vowel reduction in Kafe was

[1]Tones are marked as follows: *a̋* Extra-high; *á* High; *à* Low. The diphthongs *ai* and *au* are phonemic and generally take a single tone mark which is indicated on the second vowel of the vowel cluster. All tones and syllabic values were verified by whistling, supplemented where appropriate by discussion with language speakers.

also conditioned by tone. For example, we could account for the fact that deletion did not apply to 'mud' and 'banana sp.' if only Low vowels were deleted diachronically, and the vowels which did not undergo deletion/reduction in 'mud' and 'banana sp.' were High in proto-K-Y. With this in mind, we turn our attention to an analysis of the tonal correspondences in K-Y.

3 A Comparison Based on Lexical Tone

In this section we examine tone correspondences in disyllables.[2] Before presenting the comparative series, we briefly outline the tonal system for each of the four dialects. The dialects can be characterised in terms of three parameters: possible patterns of H and L that occur, a distinction between stable and unstable word-final tones, and the presence or absence of extra-high tone. In terms of possible patterns, the two tone patterns HL and LH occur in all the dialects, LL occurs in all but Move, and HH occurs only in Huva.

Only Move exhibits a distinction between stable and unstable word-final tones. Unstable tones undergo tone sandhi processes across the following boundaries:

Qualifier + N
NP_{poss} + NP
N + suffix(es).

Unstable tones are always High, but become Low preceding one of the specified boundaries. They are of three kinds (marked $_1$, $_2$, $_3$) depending on the type of tone sandhi affecting the word following the boundary as illustrated in (1-3).[3]

1) /lòlé$_1$ kàyálè/ > [lòlè$_1$kàyàlé] 'two pigs'
two pig

2) /kòlí$_2$ kàyálè/ > [kòlì$_2$káyálé] 'scared pig'
scared pig

3) /fèlá$_3$ kàyálè/ > [fèlà$_3$kàyálé] 'wild pig'
wild pig

Stable tones may be either High or Low. Where the word preceding one of the specified boundaries bears a stable tone (marked $_s$), this tone remains unchanged while following tones are flattened to Low as illustrated in (4-5).

[2] Only disyllables have been used in comparison, as polysyllables often evidence additional tonal variations brought about by processes of compounding. (Some examples are provided in Table 4 below.)

[3] /y/ and [y] indicate palatal approximates, not rounded high vowels.

4) /hógà$_S$ kàyálè/ > [hógà$_S$kàyàlè] 'left pig'
left pig

5) /faípaí$_S$ kàyálè/ > [faípaí$_S$kàyàlè] 'white pig'
white pig

The distinction between stable and unstable tones is widest in Move. The range of variation in K-Y is such that this marking is not necessarily uniform between dialects, although tone sandhi does operate across the same boundaries in all the dialects.

The third parameter distinguishing between the tone systems of the dialects is the presence or absence of extra-high (EH) tone. EH tone does not occur in Huva or Yate, and is relatively uncommon in Move and Kami, though it is more common in Kafe. Table 4 exemplifies lexical EH tone in Move, Kami, and Kafe.

TABLE 4: EXTRA-HIGH TONE (MOVE, KAMI, KAFE)

Huva	Yate	Move	Kami	Kafe	
haívuà	*hàfùʔyá*	*hàvùtấ$_U$*		*àrèfúʔnấ*	root
óvú	*knéfì*	*kàvévǐ$_U$*	*kànévì*	*ốfú-hànấfì*	star
haínú	*ínù*	*haínǔ$_U$*	*haínù*	*hànúfé*	wart
híkó	*íkò*	*ìkó$_S$*	*ǐkó*	*ərìkố*	navel
mùmópà	*múmùsópà*	*bùmúsòpá$_S$*	*bǔmúsópá*	*kùgǔsópá*	dust
rùkésá	*lúkèsáná*	*lúkèsà$_S$*	*lǔképá*	*tǔkésà*	wedge

With this background, we can turn to the revised comparative series. When tonal information is added to an expanded Table 1, eight tonal correspondence sets result. These are indicated in Table 5 as 1A, 1B, 2A, 2B, 3A, 3B, 4A, and 4B. Note that forms that are lexically cognate but tonally non-cognate are enclosed in parentheses; lexical non-cognates should be obvious. Forms with hyphens like *-gépóʔ* 'leg calf' indicate inalienably possessed nouns, with the possessor identified by a prefix.

TABLE 5: K-Y COMPARATIVE SERIES

	Huva Kiovi D1	Yate Nupagimi D2	Move Havi D3	Kami Litipinaga D4	Kafe Koruvani D5	[Dialect] [Village]
1A	HH	HL	LH$_U$	LL	HL	
	ápá	*hápà*	*hàpá$_U$*	*hàpà*	*hápà*	mud
	kóráʔ	*(kòlàná)*	*kòláʔ$_U$*	*kòlàʔ*	*kóràʔ*	blood
	kótúʔ	*kótù*	*kòtúʔ$_U$*	*kòtù*	*tírúʔ*	lake

1B	HH	HL	HL_S	LL	HL	
	kíré?	*kílè*	*kílè*$_S$	*kìlè*	*kírè?*	corn cob
	-gépó?	*-gémò*	*-gépò?*$_S$	*-gèpò?*	*yəgágú?*	leg calf
	hévá?	*héfà*	*hévà?*$_S$	*hèvà*	*mépò*	bean
2A	HL	HL	LH_U	LL	HL	
	kórì	*kólì*	*kòlí*$_U$	*kòlì*	*kórè?*	scared
	évè	*yófè*	*èvé*$_U$	*èvè*	*yəfò?*	sugarcane
	núpà	*(nùpá)*	*nùpá*$_U$	*nùpà*	*hàní*	black
2B	HL	HL	HL_S	HL	HL	
	hógà	*hógà*	*hógà*$_S$	*hógà*	*hógà*	left
	^{m}búkò	*múkò*	*búkò*$_S$	*búkò*	*múkò*	hot
	ɱágà	*lmágà*	*làmágà*$_S$	*làmágà*	*təmágà*	right
	-gétà	*-gésà*	*-gétà*$_S$	*-gétà*	*-gésà*	ear
3A	LL	HL	LH_U	LL	LH	
	kènù	*kénù*	*kènú?*$_U$	*kènù*	*(kénù?)*	grasshopper
	ktì	*ktì*	*kàtí*$_U$	*kàtì*		arrow type
	ktà	*(kná)*	*kàta*$_U$	*kàtà*	*kàná*	heavy
3B	LL	HL	HL_S	LL	LL	
	kaì	*(kâì)*	*kaí*$_S$	*kaì*	*kènà*	skirt
	hàvà	*haísà*	*hávà*$_S$	*hàvà*	*kərõgəró*	blond
	-vòvà	*(-fàfá)*	*-vóvà*$_S$	*-vòvà*	*-génà*	neck
4A	øH	øL	LH_U	LL	LH	
	hní?	*hnì*	*hàní?*$_U$	*hànì?*	*hàní*	night
	rní	*(nínì)*	*ɗní*$_U$	*(d ɪ́n ɪ)*		paint type
	kvú	*(kaù)*	*kàvú*$_U$	*kàvù*	*àpé?*	grass
4B	øH	øH	LH_S	LH	LH	
	mná	*(nmà)*	*nàmá*$_S$	*nàmà*	*nàmá*	bird
	rgá	*(lgà)*	*làgá*$_S$	*làgá*	*ərəgá*	fruit
	dtí?	*nté*	*dètè?*$_S$	*dètè?*	*nəntérà*	morning

Ignoring correspondence set 3A for Kafe, the tonal correspondences between Huva and Kafe can be summarised as follows:

	Huva	Kafe
1A/B	HH	HL
2A/B	HL	HL
3B	LL	LL
4A/B	øH	LH

These correspondences can be accounted for straightforwardly if we hypothesise that the tonal patterns for proto-K-Y were as follows:

	Proto-K-Y (preliminary)
1A/B	HH
2A/B	HL
3A/B	LL
4A/B	LH

In addition to accounting for the present-day reflexes in Huva and Kafe, this hypothesis accounts for the vowel deletion and reduction data outlined in section 2. All occurrences of vowel deletion and reduction occur in sets 3A/B and 4A/B. Thus, we can hypothesise that these processes only affected Low tone vowels.[4]

To differentiate between the A and B sets, we can hypothesise that proto-K-Y had a stable/unstable distinction similar to that in Move. This distinction is not only maintained in Move, but can be used to account for the differences in tone patterns in the reflexes of sets 2A versus 2B for Kami, and in the reflexes of sets 4A versus 4B in Yate and Kami. The final proposed tonal system for proto K-Y, then, is as follows:

Proto-K-Y tonal system			
1A	HH_U	1B	HH_S
2A	HL_U	2B	HL_S
3A	LL_U	3B	LL_S
4A	LH_U	4B	LH_S

The historical shifts required to explain each of the five dialects are as follows.[5]

[4] There are exceptional forms like Huva *hàvà* 'blonde' in which vowels with Low tone do not delete. There are, however, no exceptional forms in which vowels with High tone do delete.

[4] While a good number of lexical tone patterns in Table 5 are systematically relatable, there remain exceptions, and the forms in parentheses in Table 5 are examples. A study of individual speech forms from neighbouring villages which represent the same dialect, and even of two brothers from the same household, shows that this is an acceptable form of variation. It also demonstrates that the functional load of lexical tone is relatively low.

The evidence does not enable us to say confidently that the historical shifts all happened in the way they are presented below. It is possible, and even likely, that the ancestral forms of groups of dialects underwent a single change, and that modern dialects represent changes over a considerable period of time. More emphasis should therefore be placed on the relatedness of the present-day *systems* of tone.

i. Only Huva displays HH combinations, but it lacks the stable/unstable distinction. We thus assume the following historical shift to derive the present-day Huva forms.

H1a $*XT_U > XT$ (where X = H or L tone, and T_U = an unstable tone)

ii. In Yate approximately 95% of about 500 disyllables collected bear HL tone. Like Huva it lacks the stable/unstable distinction, and *HH combinations are realised consistently as HL. As an explanation of this, we suggest the following historical shifts.

Y1a $*XT_U > XT$

Y2a HH > HL

iii. Move maintains an important distinction between unstable and stable word-final tones. We notice, too, that there are no HH or LL combinations.

Considering first the unstable tones, we find that the words with final unstable tones in each of the major tone-classes (HH, HL, LL and LH) become LH_U in Move.

Among the stable toned words, we see that $*HH_S > HL_S$, and $*LL_S > HL_S$, while HL_S and LH_S words are unaffected.

The historical shifts required to explain the Move forms are as follows.

M1 $*XT_U > LH_U$

M2 *HH > HL_S

M3 LL > HL_S

iv. To relate Kami tones to those of proto-K-Y, the following historical shifts are required.

Km1b $XT_U > LL$

Km2b $*HH_S > LL$

v. Turning to Kafe, if we discount non-cognates, the following historical shifts are required to relate Kafe tones to those of proto-K-Y.

Kf1a $*XT_U > XT$

Kf2a HH> HL

4 Extra-High Tone

We have suggested an explanation of the relationship between the basic tone patterns of the cognate forms in Table 5. In this section we examine the creation of extra-high tones, which occur in Move, Kami and Kafe. Without this additional tone (which is phonemic), Move would be a pitch-accent or 'restricted' tone language, since only the following tonal combinations involving High and Low tone are found on mono-, di-, and tri-syllables:

H_S	HL_S	LHL_S	HLL_S
	LH_S	LLH_S	HLH_S
H_U	LH_U	LLH_U	HLH_U

Extra-high tone is relatively uncommon in Move, with about 5% of the lexicon displaying a lexical EH (eg. *lòkǐ*$_U$ 'strong'). More words have what is termed an 'inherent' High tone which will be subject to an automatic process of raising to EH if a preceding Low tone is itself raised to High by tone-shift. EH is thus created to maintain relative distinctiveness. Compare (6-7) where the syllable in bold in *-vìtíʔ* 'from' bears an inherent High tone.

6) /kàyálè$_S$ -pì -vìtíʔ/ > [kàyálè$_S$pìvìtîʔ] 'from their pig'
pig their from

7) /yóʔ$_3$ -pì -vìtíʔ/ > [yò$_3$pìvítíʔ] 'from their house'
house their from

In (6), *kàyálè*$_S$ triggers tonal flattening, while in (7), *yóʔ*$_3$ triggers the process which raises the first syllable of *-vìtíʔ* to High, and the inherent High tone to Extra-high.

A similar process of tone-change accounts for the Extra-high tones in a number of compounds like *kànólíʔ* 'cemetery', and *kànévî* 'star'. With the exception of certain exclamations, EH can only occur word-finally and can only be unstable in Move. About half a dozen items with lexical Extra-high tone are minimally distinct from segmentally identical words which bear High tone (eg. *hàlî*$_3$ 'firewood' and *hàlí*$_S$ 'arrow'). While EH tone is now phonemic, the evidence points to it being a derived tone historically. That is, it was evidently not phonemic in proto-K-Y.

6 Conclusion

The purpose of this paper has been to establish that the dialects of Kamano-Yagaria form a linguistic unity. Thus, linguistically speaking, Kamano and Yagaria are not distinct languages. The tonal data provide evidence of this, because tone functions as part of a relatively complex system and we can relate lexical tones between dialects. Further analysis should show even more tonal evidence for the essential unity of K-Y. For example, the operation of tone sandhi across the same boundaries as those exemplified for Move demonstrates that the Yate system of tone is of the same type as that shown for Move even though 95% of the lexicon carries a HL tone pattern. Likewise, tone sandhi in the same contexts in Kami and Kafe would allow us to refine our comparison of lexical tone patterns and would show that these dialects do in fact

display reflexes of the historical stable/unstable distinction. Limitations of space preclude a comparison at this level of detail in a preliminary paper. A complete linguistic comparison of the relationship between the dialects will relate tonal, morphological and lexical information. Whether particular dialect speakers consider other dialect forms to be distinct languages or not raises separate, non-linguistic issues.

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