Linguistic Contact in Ancient South China: The Case of Hainan Chinese, Be, and Vietnamese
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This paper[1] considers three genetically unrelated languages spoken on Hainan island and in Vietnam, and shows that there are close similarities in the historical development of the initial consonant systems. This convergence is seen to be the result of linguistic contact in the South China area in the second half of the first millennium A.D. In addition, an explanation is suggested for the direction of phonological convergence.

The three languages are:

1) Hainan Chinese (HnC), by which is meant the Min dialects which are the main form of Chinese spoken on Hainan island (Guangdong province). Chinese is one branch of the Sino-Tibetan stock.

2) Be, sometimes also referred to as Ong-Be or Limkow. In spite of large numbers of Chinese loans (over 50 per cent of the lexicon, according to Hashimoto (1980)), Be is clearly related to the Tai and Kam-Sui families.

3) Vietnamese (Vn), the national language of Vietnam, which belongs to the Viet-Muong (VM) branch of the Mon-Khmer (MK) stock.

The modern initials. A comparison of the initial consonant inventories of these three languages shows some interesting resemblances (Table 1). HnC is represented by the 海口 Haikou dialect, from Chang 1976; Be is from Hashimoto 1980; Vn is represented by the Hanoi dialect, with the traditional (quoc-ngu) spelling in parentheses. We may note these common features: 1) presence of the voiced implosives [ɓ ɗ]; 2) the labial and velar voiceless aspirates vary with or are replaced by affricates/fricatives, while [t^h] is missing in HnC and Be; 3) there is no plain (voiceless unaspirate) [p]; 4) there is only one apical (i.e. dental/palatal/retroflex) affricate: this[2] is particularly remarkable in HnC, since most Chinese dialects distinguish at least an aspirated/plain pair in this region.

Genetic/historical background. Before turning to the historical developments lying behind these common features, some general points should be made concerning the genetic affiliations of the languages.

The exact position of Be vis-à-vis the Tai and Kam-Sui(KS) groups is not yet clear. It has been linked to KS by Benedict (1975, 4) and Haudricourt (1966, 53), and to the Central branch of Tai by Hashimoto (1980, v); see diagram, Table 2. The further affiliations of Kadai are still in doubt, with Austronesian (Benedict 1942 and 1975) and Chinese (e.g. Li 1976)--and therefore presumably Sino-Tibetan--the main contenders. In any event, HnC, Be and Vn may be regarded as unrelated genetically: it has never been suggested that Vn is related to Chinese; and even if Tai and Chinese are to be connected genetically, the developments under consideration here date from a time or times when the two were indeed separate, namely the periods of proto-Tai and Ancient Chinese.

However, both Vn and Tai (and also KS) have a large number of words with Chinese correspondences. In Vn these are clearly loans,

of two types: 1) a homogeneous group originally borrowed as the readings of Chinese characters, when these were acquired, in the late first millennium A.D., for use in writing both Vn and Chinese (as a literary language); this type is known as Sino-Vietnamese (SV); 2) a more heterogeneous, non-literary group that is generally considered to represent earlier borrowing than SV. As for the Chinese-related words in Tai, many are reconstructible for proto-Tai (pT), although they may represent loans antedating the pT period. In comparing Be and HnC an attempt will be made to exclude words having this type of dual etymological possibility, since the aim is to show that Be and HnC have influenced each other in areas beyond the scope of lexical borrowing. That is, the two languages share so many phonological changes that any given Tai/Chinese root may well have the same phonological shape whether it arrived in Be by inheritance from proto-Kam-Tai or by borrowing from modern HnC.

This paper will mainly deal with the evolution of initial stops, with some reference to the affricates and fricatives. The proto-languages that are the sources for the three languages are all to be reconstructed with three full series of stops, namely plain, aspirated and voiced. Kam-Tai and proto-Viet-Muong(pVM) also show a partial series of preglottalized initials /ʔb ʔd ʔj/. The tonal systems of all three languages may be understood in terms of a three-way proto-tone contrast in non-stop-final syllables, plus a fourth, non-distinctive "tone" in stopped syllables. At a relatively early point the voicing distinction in stops was lost, the voiced stops merging in various ways with the plain and/or aspirated stops, but leaving an effect on the tone, so that (to simplify somewhat) each toneme was split into two (see Matisoff 1973). In Vn and Be the *preglottalized initials pattern with the voiceless stops in tonal development.

In the discussion that follows, Vn will be compared with pVM forms as reconstructed by Thompson (1976)[3], with SV loans compared to Karlgren's Ancient Chinese (AnC). HnC is compared with Amoy (Am; Southern Min) and Fuzhou (Fu; Northern Min) as given in Norman 1973 and 1974, plus Norman's proto-Min initials. It is generally considered that the Min dialects split off from the rest of Chinese at some point prior to the time of AnC (main attestation in the Qie-yun rhyming dictionary, 601 A.D.). In the case of Be, it is uncertain which proto-language is to be taken as directly ancestral: accordingly, comparison is made both to pT and KS, occasionally also to Li[4]. Tones are labeled according to the historical categories /A B C D/(D is the stop-final category), with added numbers 1 for reflexes of non-voiced initials ("high series") and 2 for reflexes of voiced initials("low series").[5]

For fuller treatment of some of the historical developments discussed below, see Hashimoto 1960 and Chang 1976 for HnC, Haudricourt 1965 for Be, and Ferlus 1975 for "native" VM and Maspero 1912 for SV.

The implosives. In all three languages the modern implosives represent a merger of the *plain and *voiced stops; see Table 3 for representative examples. Note that the Be and Vn implosives do not, contrary to what might be expected, have any historical connection with the *preglottalized initials of pT and pVM, which have become

Table 1-Modern Initials

HnC				Be				Vn			
ɓ	ɗ			ɓ	ɗ			ɓ(b)	ɗ(d)		
	t	ts~tʃ	k		t	tʃ	k		t	tʃ(tr,ch)	k(k,c,q)
ph[pf^{h}~f]			kh[kx^{h}]	pf[pɸ~ɸ]			kx	f(ph)	th	s(x,s)	x(kh) h
m	n		ŋ	m	n		ŋ	m	n	ñ(nh)	ŋ
	s		h			s	h	v	l	z(d,r,gi)	ɣ(g)
v	l	z		v	l	ʒ					

Table 2-Kadai Relationships

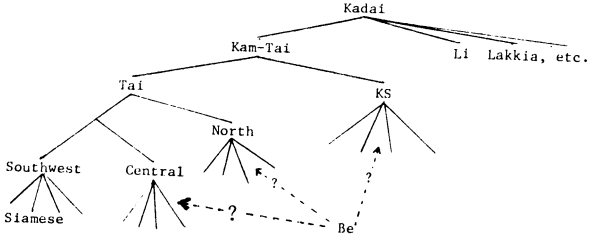

Table 3-Modern Implosives from *plain, *voiced

	HnC	HnC Am	HnC Fu	pMin	
divide	ɓun A1	pun A1	puoŋ A1	*p	分
to fly	ɓui A1	pe A1	pui A1	*-p	飛6
to bark	ɓui C2	puiC2	pui C2	*-b	吠
belt	ɗua C1	tua C1	tai C1	*t	帶
heavy	ɗaŋ C2	taŋ C2	toiŋ C2	*d	重
long	ɗo A2	tn̩ A2	touŋ A2	*-d	長

	Be	Be pT; Sui
go	ɓoi A1	*pai A1
mud	ɓoŋ A2	*boŋ A2
low	ɗom B1	*tam B1
stone	ɗin A2	Sui tin A2(< *din)
rope	ɗak D2	*ɟɨak D2

	Vn	pVM; AnC	
three	ɓa A1	*pa A1	
harrow	ɓɨɔ A2	*bɨə A2	
sick	ɗau A1	*taw A1	
field	ɗoŋ A2	*doŋ A2	
cloth	ɓo C1	*puo C1	布
skin	ɓi A2	*bjiɛ̯ A2	皮
certain	ɗiñ C2	*dieŋ C2	定

Table 4-*preglottalized stops > sonorants

	Be	pT		Vn	pVM
thin	viaŋ A1	*?baaŋ A1	vomit	mɨə C1	*?ba C1
to fly	vin A1	*?bin A1	sew	măi A1	*?bălA1
nose	loŋ A1	*?daŋ A1	water	nɨək D1	*?dak D1
salty	laŋ B1	*?daŋ B1	fire	năm A1	*?dăm A1

Table 5-HnC Aspirates

	HnC	Am	Fu	pMin	
break	pfua C1	phua C1	phuai C1	*ph	破
escort	pfua C2	phuã C2	phuaŋ C2	*bh	伴
sky	hi A1	thĭ A1	thieŋ A1	*th	天
bug	haŋ A2	thaŋ A2	thøiŋ A2	*dh	蟲

Table 6-/t/ < apical affricates/fricatives

	HnC	HnC Am	HnC Fu	pMin	
early	ta B1	tsa B1	tsa B1	*-ts	早
mountain	tua A1	suã A1	san A1	*s	山
snake	tua A2	tsua A2	sie A2	*-dʒ	蛇
time	ti A2	si A2	si A2	*ʒ	時

	Be	Be Sui	pT	
to crow	tan A1	tʃan A2	*xan A1	
spit out	tai A1	tʃe A2	*ɣaai A2	
stride	tam C1	sam C1	*xaam C1	
thatch-grass	tia A2	ja A1	*ɣaa A2	

cf. also Kam ɬa

	Vn	Vn Muong(Lang-Lo)
hair	tɔk	sŏk
ear	tai	sai

	Vn(SV)	AnC	
yesterday	tak	*dzâk	昨
few	thieu	*ʃiäu	少

sonorants in the modern languages (Table 4).

The aspirates. (Here and subsequently 'aspirate' will be used as a cover term for these phonemes, which are etymologically related to voiceless aspirated stops, but which in the modern languages include aspirated stops (Vn /th/); affricates, usually with the stop element very weak; and fricatives). The HnC aspirates correspond regularly to Min aspirates, with Min th corresponding to HnC h (this development is also found in the Jianyang (mainland) Min dialect). HnC also agrees with the rest of Min in showing some aspirates with low-series tones; for these Norman reconstructs *voiced aspirates[7]. See Table 5.

The picture in Be is complex. As in HnC, Be /h/ corresponds to pT *th and occasionally to *d: Be hem A1, pT *thεεm A1 'together'; Be ham A1, pT *thram A1 'scrotum'; Be huŋ C2, pT *dɔɔŋ C2 'stomach'. The velars have a few correspondences, but none involving pT: Be kxo C1, Kam ţha C1 (*khja ?), Li khaɨ 3 'lightweight'[8]; Be kxon A1, Kam ţhan A1 (*khjan ?), Li khɨn 1 'heavy'; Be kxou A2, Li kha:i 3 'calculate'. The Be labial/pf/ has regular pT correspondences, but they involve fricatives, not stops: Be pfun A1, pT *fon A1 'rain'; Be(Savina) phon C1, pT *fan C1 'twist'. In these sets Be shows aspirates; there are also examples of Be nonaspirates = pT *aspirates: Be ɗuai C1, pT *thuai C1 'cup, saucer';Be ɗoŋ A1, pT *thɨŋ A1 'arrive'; Be ka C1, pT* khaa C1 'kill'. The examples cited in this paragraph are close to exhaustive for roots involving aspirates that may not be suspected of being Chinese loans: it seems that most of the Be aspirate-initial words are of Chinese origin (Haudricourt 1965, 139 and 145-6), although the high proportion of Chinese-related words with all initials makes it difficult to be sure of this. To add to the complexity, the status of aspirates in pT itself is not entirely clear. We lack space to go into this problem, the gist of which is that cognate sets where all three branches of Tai unambiguously indicate *voiceless aspirates are relatively rare(see Gedney 1979 for a proposed solution to this question); furthermore, these sets seldom correspond to aspirate-initial words in KS. At this point I will only say that the confused status of the Be aspirates may in part reflect the situation in pT.

The picture is also murky in Vn, but in a similar way. Again, most aspirate-initial words are of Chinese origin(Ferlus, 43); for these there is a fairly straightforward relation to the AnC aspirates /*ph th kh/(Maspero, 52), e.g. SV fəm B1, AnC 品 *phiəm B1 'item'; SV thai C1, AnC 太 thai C1 'great'; SV xo B1 AnC 苦 khuo B1 'bitter'. Ferlus (43) is of the opinion that Vn /f th x/ (spelled ph th kh) represent earlier aspirated stops; cf. also Maspero (42). The labial f(ph) also is found in words originally having AnC *p and *b that underwent a conditioned change to *f and *v later in Chinese. If this change (known to students of Chinese historical phonology as dentilabialization) is dated back to the Chinese source of SV (e.g. Dong Tonghe (1954) reconstructs a series /f f' v ɱ/ for AnC), we have a close equivalent to the development of Be /pf/.

There are also non-Chinese roots in which both Vn and Muong (the 'other', less Sinicized branch of VM) have aspirate initials, with the labial not exemplified(cf. Be, where native/pf/ may be a

secondary development from *f). For these it is possible to reconstruct pVM aspirates (Thompson), but Maspero does not do so owing to a lack of correspondences in the rest of MK; he considers that the VM aspirates are a later development in pVM "at the expense of the former plain and voiced stops" (Maspero, 112). No mechanism or conditioning for such a change is suggested by Maspero; Ferlus (43) cites examples indicating development from the collapse of a presyllabic stop with a main-syllable-initial /h/, i.e. CəhVC > ChVC (e.g. Thavung kəhɔy, Vn *khoi > xoi 'smoke')[9].

To sum up, the aspirates of Be and Vn show a clear connection to the AnC voiceless aspirated stops, in that many or most of the words with these initials are of Chinese origin. The labial members of the series also relate to fricatives(pT *f in Be, Chinese dentilabialized stops in SV). Finally, there is also an unclear relation with a series of *aspirated stops which is of uncertain status in the respective protolanguages.

Lack of /p/; source of /t/. In all three languages, initial /t/ is secondary, deriving from various apical affricates and fricatives; see Table 6 (recall that original *t merged with *d as /ɗ/). F.K.Li (1965, 156) suggests that correspondences of pT velars with Sui palatals, as in 'crow''spit out' and 'thatchgrass'(table 6), may represent proto-Sui-Tai(probably equivalent to proto-Kam-Tai) palatalized velars; while Sui dental sibilants corresponding to pT velars ('stride') may represent "a new series...perhaps palatals." Parallelism with HnC and Vn suggests that Be derives from forms more similar to the Kam and Sui: this is one area in which Be resembles KS rather than Tai.

The absence of initial /p/ may now be explained. In the historical perspective, the initials/ɓ ɗ k/ in all three languages form a single series, representing the former plain and voiced stops, which presumably first merged, then shifted towards implosives, with the velar unaffected for physiological/aerodynamic reasons (Haudricourt 1950, 177; Greenberg 1970, 128; Wang 1971, 272; Ohala forthcoming, ms. 7-11). The later advent of initial /t/ then gives the system the appearence of having two incomplete series (ɓ/ɗ/- and -/t/k)

The Li languages. In considering the languages of Hainan, mention should be made of the Li dialects spoken in the south and central portions of the island. Distantly related to Kam-Tai (see diagram, Table 2), these languages may be aboriginal to Hainan (Schafer 1970, 56 ff.), and might be suspected of showing some of the developments described for the neighboring HnC and Be. Unfortunately, nothing conclusive can be said about the applicability of these developments to Li owing to the lack of any reliable notion of the aspect of proto-Li. The picture that emerges based on some preliminary study is one of dissimilarity to the HnC-Be-Vn developments, along with a few vaguely reminiscent points. At least two dialects (Ouyang and Zheng 1980) have a plain/aspirated/preglottalized contrast in initial stops, as well as a plain/aspirate distinction in the affricates /ts tsh/. The latter, along with the presence of initial /p/, diverges from the HnC-Be-Vn type of system. Also, unlike

the Be and Vn implosives the Li /?b/ and /?d/ do have connections with the *preglottalized stops of pT, and therefore presumably also with some such element of proto-Kadai; e.g. Li ?beɨ 1, pT *?bai A1 'leaf'; Li ?doŋ 3, pT *(kra-)?doŋ C1 'winnowing basket'. There is no indication of the Be and Vn development of preglottalized stop to sonorant.

Location and date of contact. The presence of the traits under discussion in the separated locations of Hainan and Vietnam suggests that these are outliers of an area that formerly encompassed the intervening portion of the mainland, roughly equivalent to present-day southern Guangxi. Contact among our three languages in this area must be dated not much later than 939 A.D., the date of the independence of Vietnam from China. This fits with the historical facts: although Chinese political presence in the area dates as far back as the Han dynasty, with the first conquest of northern Vietnam in 111 B.C.(Schafer 1967, 15), large scale settlement and diffusion of Chinese language and culture probably began in earnest only with the Sui dynasty's re-conquest of Vietnam in 603 A.D., and lasted throughout the Tang, with Vietnam reducing its participation in the Chinese sphere with its independence in 939. Much the same history of conquest and re-conquest applies to Hainan, with the difference that it has remained a part of China.

Hashimoto (1978, 9) states that the source of SV was "a kind of koine spoken in the southwestern part of China". To this it must be added that, insofar as the koine shares in the special developments also seen in Vn and Be, it represents only one third of a three-language interaction (more precisely, it is a later phase of the Chinese 'third', since Chinese contact is attested that is earlier than the SV period). HnC may be seen as a descendent of this old southwestern Chinese, surviving in Hainan as a relic area. Certain of the special traits of this type of Chinese are still found in some dialects on the neighboring mainland (Hashimoto 1978, 6-7; note especially the presence of implosives in Huaxian of Guangdong and Tengxian of eastern Guangxi). The Be may or may not have been located on Hainan during this period: Schafer (1970) indicates that the Be are among the ethnic groups that were not present on Hainan before the Southern Sung era(c. 11th century A.D.). The linguistic evidence does not indicate whether Be acquired the areal traits from both Chinese and Vn in concert, or from Chinese alone.

Explaining the common features. Granted that the resemblances between HnC, Be and Vn are to be attributed to contact, why is it these particular features that are held in common, rather than any others? Two types of cause for this seem possible: influence of a fourth language, or the interaction of characteristics of the phonological systems of the three languages in question.

The first type of cause has been suggested for the HnC implosives, namely influence from Li (Ting, 1, citing F.K.Li in the Monthly Bulletin of Acadeica Sinica 1.7, 1930). Extension of this explanation to the rest of the contact area as defined above cannot be ruled out, since the Li may have formerly inhabited the mainland as far west as Vietnam (Schafer 1967, 53). It is difficult to

imagine how a language such as Li, with a three-way contrast for initial stops, including plain, aspirated and preglottalized, could have encouraged the HnC-Be-Vn *plain and *voiced stops to merge as implosives. On the other hand we have little notion of the appearance of proto-Li, and it is true that at least some of the modern plain initial stops are secondary developments from nasals, e.g. Li(Baoding) pa 1, southern Li (Savina 1931) ma, Sui m̥a A1, pT *hmaa A1 'dog'.

But while factors 'external' to the HnC-Be-Vn grouping may not be ruled out in explanation, internal factors seem more important here, by which I mean the characteristics of the three languages involved and how they may have affected each other while in the contact situation. It should be emphasized that we are dealing here with a rather intensive degree of contact: the particular phonological commonalities of the three languages, as well as the highly Sinicized lexicons of Be and Vietnamese, differentiate them from the multiplicity of other languages spoken in or near the same area. It may be hypothesized that Chinese, Be and Vn participated in a lowland community of relatively advanced culture, distinct from the highlands which were the location of the various non-Sinicized groups, only nominally under Chinese control.

Probably the most puzzling and interesting phonological development described above is the reinterpretation of the old plain/aspirate/voiced contrast as one of implosives versus highly aspirated affricates and fricatives. The change of apical affricates/fricatives to /t/ must have been later, since the secondary /t/ is seldom confused with the /ɗ/ that represents the original *t, and it may have been in part due to structural pressure (cf. Chang 1976, 24, where the developments in the dental/palatal region are described in terms of a drag chain).

Let us assume that the merger of the old plain/voiced contrast in both Vn and the southwestern-Chinese ancestor of HnC was in favor of the plain, voiceless nonaspirate. This would produce for HnC the common type of plain/aspirate system found in all modern Chinese dialects except Wu. As Hashimoto points out (1960, 132-3), this may be seen as a contrast of glottalized versus non-glottalized, in the following way: the plain stops are accompanied by a glottal closure which relaxes to begin voicing simultaneous with the release of the oral closure (Harris 1972 describes this as a characteristic of the voiceless unaspirate initials /p t c k/ of modern Siamese). Aspirates, on the other hand, must be free of glottalic activity (i.e. the glottis must be open) until well after release of the oral closure, in order to allow for delay in voice onset. Now, while this sort of reinterpretation seems natural and is attested as subphonemic characteristic, no Chinese dialect outside of the area we have been describing is known to have taken the glottalized member of the pair so far as to produce implosives[10].

Thus, the development of implosives (highly glottalized) and fricated aspirates (highly un-glottalized) seems to show an attempt at maximizing a glottalization contrast. Motivation for this attempt may be found in the question of the origin of the Vn aspirates. If

we assume that pVM lacked aspirates as a distinct class, then upon the loss of the voicing distinction the language was left with only one phonemic series of stops. The language then began to acquire the aspiration contrast, partly by the collapse of presyllables (CəhVC > ChVC), and especially by the advent of great numbers of Chinese loanwords in which aspirates had to be kept distinct from non-aspirates (cf. the Pattani Malay phenomenon referred to in note 9). Evidently the single stop series already extant had some phonetic trait (perhaps breathiness) that made it insufficiently different from the newly-acquired aspirates; having had no other stop series to oppose it, it may have ranged rather widely in phonological space[11]. To maintain the new distinction, the old and the new series repelled each other in phonological space, producing the implosive/aspirated affricate system now familiar to us.

While this change may have had its initial impetus from the confrontation of Vn and Chinese, the resulting tendency spread to both Chinese and Be. Again, it is difficult to situate Be in the proposed scenario: it may or may not have been located on the mainland during the period in question, and it may or may not have had phonemic aspirates prior to the contact situation. It is quite possible that Be acquired the areal traits described here largely from HnC alone.

Summary. We have described several remarkable phonological changes held in common by HnC, Be and Vn. Essentially these are a reinterpretation of a plain/aspirate/voiced contrast as an implosive/aspirated affricate contrast, with a subsequent change of various apical affricates and fricatives to /t/. It is postulated that these common features arose during contact among the three languages in the area of northern Vietnam-Guangxi-western Guangdong during the approximate period 600-950 A.D. The principal phonological change described may be the result of the introduction of the phonemic feature of aspiration from Chinese into Vn (and possibly also into Be).

Notes

1. I am indebted to the following for their comments, criticism and assistance in obtaining reference materials: Chang Hsien-pao, Chang Kun, Christopher Court, Mantaro Hashimoto, John Kingston, James Matisoff, John Ohala, and William Wang. Abbreviations used: Am Amoy, AnC Ancient Chinese, Fu Fuzhou HnC Hainan Chinese, KS Kam-Sui, MK Mon-Khmer, p proto-, SV Sino-Vietnamese, T Tai, VM Viet-Muong, Vn Vietnamese.

2. E.g. all eighteen dialects listed in Hanyu Fangyan Cihui (Lexicon of Chinese Dialects, Beijing, 1964).

3. For a somewhat more realistic analysis of the pVM consonant system, incorporating more Muong dialects than Thompson, see Ferlus 1975, which does not, however, propose reconstructions for individual lexical items.

4. Li (Baoding dialect, "northern" type) from Ouyang and Zheng

1980, Kam from Liang 1980, Sui from Zhang 1980 and Li 1965. pT initials and tones as in Li 1977. As a matter of convenience pT forms are cited with rhymes as in modern Siamese; this is not meant to suggest that Siamese is especially conservative as to its vowels.

5. Note that occasionally later mergers and ambiguity of comparative evidence make it impossible to be exact about the proto-tone; e.g. Be shows mergers B1=C1 and B2=C2.

6. Norman reconstructs "softened" stops and affricates (written -p -t etc.) based on reflexes in certain dialects of the northwestern part of the Min area; these are not distinct from the plain and voiced nonaspirates in the dialects cited here.

7. These may also represent influence from the neighboring Gan and Hakka dialects, which consistently show voiceless aspirates for the AnC *voiced stops.

8. The Li tones 1 2 3 (= White Sand (Wang 1952) mid level, low falling, high level respectively) correspond partially to pT and KS A B C.

9. Precisely this phenomenon can be observed in the Malay presently spoken on the east coast of southern Thailand (i.e. Pattani type), where the polysyllabic Malay roots tend to become monosyllabic under Thai influence; e.g. pohon ~ pəhon~ phon 'stump'. Aspirates are also being acquired in Thai loan words (Christopher Court, personal communication).

10. The same type of development is found in Khmer (Haudricourt 1950); this is well removed from the contact area described here, and would be well worth investigating for typological and genetic parallels.

11. Cf. Moulton 1962, Liljencrantz and Lindblom 1972. Use of the notion of phonological space in connection with consonants must be regarded as speculative at this time; hitherto only vowels have been considered (e.g. the two works cited).

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