UC Berkeley

Title
Reconstruction of Proto-Tupari Consonants and Vowels

Permalink
https://escholarship.org/uc/item/2s90325q

Authors
Moore, Denny
Galucio, Ana Vilacy

Publication Date
1994

RECONSTRUCTION OF PROTO-TUPARI
CONSONANTS AND VOWELS[1]

Denny Moore and Ana Vilacy Galucio

Museu Paraense Emílio Goeldi, Belém, Brazil

INTRODUCTION

According to the most recent classification by Rodrigues (1984/85), there are ten linguistic families within the large Tupi stock: Tupi-Guarani, Munduruku, Mawé, Juruna, Aweti, Mondé, Ramarama, Arikém, Puruborá, and Tupari. Languages of the last five families are spoken in the Brazilian state of Rondônia (north of Bolivia). Published linguistic descriptions have mainly concerned themselves with the first two, Tupi-Guarani and Munduruku; the other families have come under study more recently. Until now the only proto-language within the Tupi linguistic stock which has been the object of detailed reconstructive work is Proto-Tupi-Guarani (e.g. Lemle 1971, Leite & Facó 1991, Rodrigues 1984/85, Jensen 1984). As part of a long-term comparative Tupi project, linguists linked to the Museu Goeldi in Belém, Brazil, are currently working in all the Tupian families in Rondônia and also in the Juruna family.

This article presents part of the initial results of some of the research which has been initiated on languages of the Tupari family during the last five years. It presents a preliminary reconstruction of the sound segments of Proto-Tupari, the mother language of the four modern languages of the Tupari family: Ayuru (Wayoró, Wayru, Ajuru), Makurap, Mekens (Mequém, Mequens), and Tupari. While the preliminary reconstruction presented here is a modest effort, undertaken mainly to guide further research on the Tupari languages, it is the only study of the four languages or of their prehistory written in English. The reconstruction of Proto-Tupari is important for Tupi comparative studies because Tupari is one of the three Tupian families with enough surviving members (four) sufficiently diverged (the languages are not mutually intelligible) to permit a reliable reconstruction at a considerable time depth, using the comparative method. The other two such Tupian families are Tupi-Guarani and Mondé.

In what follows, information about the speakers of the Tupari languages is given. Data sources and limitations are explained. The sound systems of the four languages are briefly summarized. Then the systematic sound correspondences are presented, along with a tentatively reconstructed proto-segment for each. The reconstructions are justified and the diachronic processes leading to the modern languages are summarized. Lastly, the cognates and their reconstructed forms are presented.

THE AYURU, MAKURAP, MEKENS AND TUPARI

The peoples speaking the languages of the Tupari family lived traditionally on the headwaters of various rivers, most of which drained south into the Guaporé River, which is the boundary between Brazil and Bolivia. The Makurap (and also the Aruá, of the Mondé family) lived on the headwaters of the Rio Branco, the Ayuru on the Rio Colorado, and the Mekens on the Rio Mequens. The Tupari lived on the headwaters of tributaries of the Rio Machado (Ji-Paraná). Also on this more northerly watershed were the Kepikiriwat, whose language, now apparently extinct, is the fifth language of the Tupari family. From the surviving wordlist it appears to be more remote from the other four languages than they are from each other.

According to Meireles (1989), the existence of the Mekens was reported in the Eighteenth Century, in the region of the Rio Mequens. There were two groups (Amniapá and Guaratágaja), whose speech was very similar.

Sustained contact with national society began in the second quarter of this century for most of these groups as rubber gatherers entered the region. The results of contact were usually economic exploitation and decimation through disease. Descriptions of the indigenous people of southern Rondônia include Caspar 1956, Métraux 1948, Lévi-Strauss 1948, Becker-Donner 1962, and Scolnik 1955.

The survivors of the various tribes were placed on posts of the old Serviço de Proteção do Índio (SPI), precursor of the present Fundação Nacional do Índio (FUNAI). In 1988-90, according to Braga (1992), the Posto Indígena (P.I.) Guaporé was home to approximately seventy-five Makurap, forty-one Ayuru, twenty Tupari, and one Mekens. Accordingly to her, the number of Makurap who actually spoke the language was forty-five, and Ayuru and Tupari only had eight speakers each on this post. The tendency is for young speakers to learn Portuguese as a first language. The largest concentration of Tupari is on the P.I. Rio Branco; there are also a number of Makurap there. The Mekens, with at least two dialect groups, are concentrated on the P.I. Mekens.

On the P.I. Guaporé some members of the older generation still retain the traditional knowledge of their culture. Shamanism is still practiced, sometimes involving hallucinogenic snuff, called 'rapé' in Portuguese, which is consumed in group sessions.

THE DATA

As part of an attempt to secure at least some tape documentation of the many languages of southern Rondônia, Moore tape-recorded a standardized list of lexical items in various languages during a field visit to the P.I. Guaporé in 1988. The list, recorded in Dolby stereo using an external microphone, included the Swadesh 200-word list and supplementary lists of animals, plants and material culture items common to the region.

The tapes of the four languages under study here were transcribed by Moore and Galucio independently and then compared. Other sources of data include Moore's field transcriptions of Ayuru and the Master's thesis of Braga (1992) for Makurap and that of Alves (1991) for Tupari (which was based on several hours of tapes recorded by Moore). There is an unpublished description of Tupari by Aryon Rodrigues, as well as an early attempt by Hanke, Swadesh, and Rodrigues (1958) to sketch the phonology of Mekens and relate it to other Tupian languages. These two works were not used as sources of data for the present reconstruction, however.

The transcription and analysis of Makurap by Braga generally agree well with that which is presented here. The analysis of Tupari by Alves differs from ours in several respects, but principally in the labiovelar consonants, which she does not recognize as phonemic.

Because of the very limited nature of the data, tone, length, and other subtle phonetic distinctions cannot be established with certainty. More difficult still is the very preliminary nature of our knowledge of the morphology and morphophonology of the languages.

The informants who furnished the data are the following:

- **Ayuru:** Paulina Macurap, a woman about thirty-two years old in 1988. She was raised by the Ayuru.

- **Makurap:** Sebastião Macurap, a man about twenty-two years old in 1988.

- **Tupari:** Alzira Tupari, a woman about twenty-five years old at the time of recording.

- **Mekens:** Otaviano Mequém, a man about seventy-four years old, perhaps the informant of Hanke.

SKETCH OF THE SOUND SYSTEMS OF THE TUPARI LANGUAGES

The approximate segmental phonemic inventories of the four languages are summarized in the table below. Segments whose status is still uncertain are indicated by angled brackets. Significant allophones are indicated in parentheses.

TABLE 1: PHONEMIC INVENTORY OF CONSONANTS

AYURU (Ay)

p	t	c	k	kw
	<d>		g	gw
β				
	r	y		
		(ñ~ỹ)		
m	n	<nj>	ŋ	ŋw
(mb)	(nd)		(ŋg)	(ŋgw)

MAKURAP (Ma)

p	t	c	k
β			g
	r	y	
		(ñ~ỹ)	
m	n	<nj>	ŋ
(mb)	(nd)		(ŋg)

MEKENS (Me)

p	t	k	kw
<b>	<d>	g	<gw>
	s		h
	.(ts)		
β			
	r	y	
		(ñ~ỹ)	
m	n	ŋ	ŋw

TUPARI (Tu)

p	t	<c>	k	kw	'
(ps)	(ts)				
(Φ)					
<b>	<d>		g	<gw>	
	s				h
β					
	r	y			
		(ñ~ỹ)			
m	n	<nj>	ŋ		

TABLE 2: PHONEMIC INVENTORY OF VOWELS - in all four languages

ORAL:	i	ɨ	u(o)		NASAL:	ĩ	ɨ̃	ũ(õ)
	e						ẽ	
		a						ã

There are five contrasting vowels in each of the four languages. These show remarkable stability over time. Each of the five vowels can be oral or nasal. The nasality may be autonomous or may be acquired through nasalization spread from some nasal segment. Nasalization spread, e.g. Ay: kwãβã 'partridge', appears to occur in all of the four languages, but the exact conditions for its spread in each of the languages cannot be specified at this time. Nasalization spread is a complex phenomenon in the Tupi-Guarani linguistic family (Harrison & Taylor 1971, Lunt 1973) and in the Mondé family (Moore 1984).

The syllable canon is generally (C)V(V)(C+), where C+ represents a morpheme-final consonant. The exceptions to this are that at least Ayuru and Makurap permit a syllable-final morpheme-medial palatal glide, y, and Tupari permits ' (glottal stop) and h in the same position. Syllables with two vowels occur, though many of these seem to span morpheme boundaries or to be the result of diachronic consonant deletion. Braga (1992) reports phonemic vowel length for Makurap.

There is no evidence of contrastive stress in the four languages. The question of tone is unresolved. In Ayuru there are two pitch levels in ascending sequences, but at least three or four levels in descending sequences. Both the Makurap and the Tupari Indians use whistled speech to communicate in the forest. However, it is difficult to find evidence of tone contrasts.

The consonantal inventory is similar in many aspects in the four languages. Each language has a series of voiceless stops and a corresponding series of nasals. In Ayuru and Makurap the nasals have post-oralized allophones before oral vowels (e.g. Ay and Ma: [mbo] 'hand') and full nasal ones before nasal vowels (Ay: [õmẽnt] 'my husband', Ma: [nõõnt] 'other'). We will refer to the post-oralized allophones as prenasalized stops.

The prenasalized voiced palatal stop nj is a problem. It cannot be an allophone of the palatal nasal ñ since this is itself a variant of ỹ. Since nj is rare and does not occur in the correspondences, its status will be left unsolved for now.

The oral voiced stop series is marginal except for the velars and the labiovelars. The voiced bilabial stop, b, appears to be always derived from an underlying morpheme-final voiceless bilabial stop, p, before vowels. (See the table of morpheme-final consonant alternations below.) Likewise many examples of g are from underlying k morpheme finally before vowels. There are, however, some examples of g and gw which cannot be explained in this manner, e.g. Ay: o-gotkip 'my neck', gwago 'sweet potato'. The oral voiced dental, d, is very rare and does not appear in the cognates.

In all the languages the palatal glide, *y*, can optionally be pronounced as a voiced palatal slit fricative. It acquires nasalization from adjacent nasal vowels, in which case it optionally can be a palatal nasal, *ñ*, which is the normal pronunciation morpheme initially. All the languages have the voiced bilabial fricative, β, which might also be analyzed as a glide. A flap *r* occurs in the four languages. It is optionally *l* in Makurap.

The four languages differ in the points of articulation which are distinguished in the voiceless, voiced, and nasal series. Makurap lacks all labiovelar consonants. Labiovelar consonants are recognized in one or more of the series for the other three languages. They are not analyzed as a sequence of stop plus glide because they occur syllable initially, where the syllable canon does not permit consonant clusters. Further, these consonants show very regular correspondences.

Tupari has both the glottal stop, *'*, and the glottal fricative, *h*; Mekens has only the latter. The voiceless palatal stop, *c*, is phonemic in Ayuru and Makurap. The Tupari voiceless bilabial stop, *p*, is an affricate, *ps*, before *i*, and a bilabial fricative, *Φ*, before *o* -- allophony similar to that of the neighboring language, Jeoromitxi. Also the Tupari dental stop, *t*, is optionally an affricate, *ts*, before *i*. In Mekens the dental fricative, *s*, is optionally an affricate, *ts*.

In morpheme-final position the contrast between the voiceless, the voiced, and the nasal series is neutralized. After oral vowels only the voiceless stops *p*, *t*, *k* and the palatal glide, *y* [y^c], occur in word-final position. These regularly alternate with their homorganic voiced counterparts (e.g. Ma: *kip* 'tree', *kiβ+ot* 'fruit') when a vowel follows the morpheme boundary:

All four languages	Ayuru & Makurap	Mekens & Tupari
/__##	/V__+V	/V__+V
p	β	b
t	r	r
k	g	g
y	y	y

After nasal vowels only strongly prenasalized oral stops, [*mp*, *nt*, *ŋk*] and the nasal palatal glide [ỹ] occur word finally. We will analyze these as nasalized allophones of *p*, *t*, *k* and *y*, respectively, and transcribe the stop phonemes without the prenasalization. For example, [ŋẽmp] 'breast' is transcribed as *ŋẽp*. At least in Ayuru and Makurap, word-final *p*, *t*, *k*, and *y* after nasal vowels alternate with β, *n*, *ŋ* and ỹ, before vowels, for example, Ay: *mẽkẽt* 'I vomit', *mẽkẽn-ẽti* 'I feel like vomiting'.

The data available are insufficient to determine the morpheme-initial morphophonemic alternations, which are more complicated. Some alternations involving dental consonants are worth noting since these help explain one of the sound correspondences, *nd:c:t:h*. This correspondence will be reconstructed as a dental consonant *D in complementary distribution with *r. At this point we only wish to point out the existence of morphophonemic alternations involving *r*, *c*, *t*, and *h*:

Ayuru:

ek tere	'on top of the house'
gia-rere .	'up in the sky'

Makurap:

teret	'name'
o-ceret	'my name'

Tupari:

het	'name'
e-ret	'your name'

There are also morpheme-initial alternations involving these sounds in cognate words in Tupi-Guarani and in Mawé. Without going into detail, we suggest that the corresponding alternations in the Tupari, Tupi-Guarani and Mawé families will eventually be shown to have a common ancestry. Examples from Gregores and Suáres (1967:223) and Graham, Graham and Harrison (1984:189):

Guarani:			*Mawé:*	
tera	'name'		-ha	'eye'
se-rera	'my name'		u-heha	'my eye'
NP rera	'NP's name'		NP eha	'NP's eye'
h-era	'his name'		t-eha	'his own eye'
			i-ha	'his eye'

TRANSCRIPTION

The transcription adopted is basically phonemic, but with certain specified sub-phonemic variation also written. This is the case for the nasal consonants. The prenasalized allophones (*mb*, *nd* and *ŋg*) of the nasal phonemes *m*, *n*, and *ŋ* are written as such to better illustrate the diachronic process of denasalization. Similarly, the oral and nasal palatal glides, *y* and *ỹ*, and the palatal nasal, *ñ*, are distinguished in the transcription.

A few other distinctions which appear to be subphonemic are also written in case they should eventually turn out to be significant: *o/u* in all the languages, *l/r* in Makurap, *s/ts* in Mekens, and *t/s* before *i* in Tupari. Syllable break is indicated by a period (e.g. Ma: βa.i 'stone'), and vowel length (to the small extent to which it can be determined) is indicated by two identical vowels.

SOUND CORRESPONDENCES:

The systematic sound correspondences among the consonants of the four languages are tabulated below, organized according to the mode of production. Hypothesized reconstructed segments are shown on the left, marked with an asterisk. Conditioning environments hypothesized for the proto-language are listed on the right, when relevant, along with the numbers of the cognate sets in which the correspondence is found. Conditioning environments

for individual languages, when relevant, are given after the sound which occurs in that language, for example in the velar correspondences for cognate set (70), *g g:—g:k (h__).

Consonants clusters spanning morpheme boundaries are often maintained in the daughter languages. When one consonant is lost, as happened in cognate sets (17), (29), (35), (51), (52), (85) and (106), it is always the initial consonant which is lost, except for the Ayuru form for 'knife', *ngite* (52). Metathesis may have occurred in (10), (11) and (80). Rather than list a separate correspondence for each of these deletions, they are simply mentioned now and the cognate set in which each occurs is included as an example of the correspondence which would obtain had not the deletion occurred. For example (29) is included as an example of y:y:y:y although the y has been deleted in Mekens.

TABLE 3: SYSTEMATIC SOUND CORRESPONDENCES

Proto Tupari	Ay	Ma	Me	Tu	Cognate sets
*p	p	p	p	p	7, 14, 15, 18, 19, 20, 27, 30, 31, 32, 33, 38, 40, 41, 46, 48, 49, 52, 55, 57,58, 62, 67, 69, 70, 73, 76, 79, 90, 93, 94, 103, 112, 114,120, 122, 123,
*p	β(V+__)	p	—	p	34
*p	Ø	—	b	p	(__+'V) 31, 122
*t	t	t	t	t	4, 8, 19, 40, 50, 51, 52, 53, 68, 69, 74, 88, 91, 92, 98, 102, 106, 112, 115, 124
*t	r +V	l +V	—	t ##	73
*t	t	Ø	—	r+V	118
*t	r	r	r	t	(__+'V) 3, 5, 58, 61
*k	k	k	k	k	1, 8, 15, 22, 25, 26, 27, 29, 32, 33, 35, 37, 44, 48, 49, 56, 60, 62, 69, 71 72, 74, 83, 89, 92, 96, 99, 102, 103, 111, 114, 115, 118, 119, 123
*k	k	Ø##	—	k	9
*k	g	—	g	k	(__+') 116
*kw	kw	Ø	kw	Ø	78, 87, 107, 109,
*b	Ø	β	b	b	(V__+V) 110
*g	g	—	k	k	32, 33, 117, 121
*g	g	—	g	k (h__)	70
*g	g	—	g	—	38
*gw	gw	β	kw	β	(__Voral) 2, 5, 6, 24, 80, 105
*gw	g	β	k	Ø	(__o) 69, 105
*gw	β	—	kw	—	(#__Vnasal) 77
*ts	t	t	ts, s	t, s(__i)	23, 38, 46,59, 81, 82, 84, 96,

*(n)dz	nd	nd	s	t, s(__i)	64, 66
*β	β	· β	β	β	8, 20 76
*β	β	Ø	Ø	Ø	(i__)12, 119
*h	Ø	Ø	Ø	h	(V__C) 34, 49, 62, 70, 79, 103, 123
*'	Ø	Ø	Ø	'	3, 5, 10, 19, 28, 30, 31, 44, 58, 61, 91, 101, 116, 122
*r	r	r	r	r	(V__V, __+V) 10, 21, 22, 37, 62, 63 77, 80, 86, 108
*r	n	l	—	—	(Vnas__Vnas) 104
*D	(n)d	c	t	h	(#__Voral) 3, 41, 54, 56, 68, 81, 82, 98
*D	(n)d	Ø/c	h	h	54
*D	---	---	s	s/h	(__i) 52, 72, 95,
*y	y	y	y	y	(__#) 29, 107, 109
*y/ñ	—	ñ(__Vnas)	—	y(__Vor)	115
*ñ	ñ	ñ	ñ	ñ	(+__Vnas) 28, 35, 39, 61, 65, 85, 113,
*ỹ	ỹ	ỹ	ỹ	ỹ	(__+, Vnas__Vnas) 1, 44, 83, 97, 99
*m	m	m	m	m	(__Vnas) 47, 51, 63, 86, 100
*m	m	p	—	m	(__Vnas) 50
*mb	mb	mb	p	p	(#__Voral) 36, 43, 67, 116
*mb	mb	—	mb	—	(Vnas+__(?)) 77
*n	n	n	n	n	(__Vnas) 13, 17, 42, 45, 47, 75, 77, 89, 104
*n	n	Ø	—	Ø	50
*n	n	t	—	—	111
*nd	nd	t	t	—	(__Voral) 4, 71
*nd	nd	—	nd	—	(Vnas+__(?)) 87
*ŋ	ŋ	ŋ	ŋ	k	(#__Vnas) 14, 89
*ŋ	ŋ Vnas	g/k Voral	k Vnas	—	17, 71
*ŋg	ŋg	ŋg	k	k	(__Voral) 52, 57, 88, 103, 110, 120, 123
*ŋg	ŋg	k	k	—	117
*ŋw	ŋgw	β	kw	β	(#__Voral) 10, 101
*ŋw	ŋgw Vor	m Vnas	m Vnas	—	1
*ŋw	β	m	m	m	(Vnas__Vnas) 25, 72, 78

The consonants of the voiceless series, *p*, *t*, and *k*, show near-perfect stability in all positions and are reconstructed as such. There are bilabial correspondences in (31) and (122), dental correspondences in (3), (5), (58), (61), (73), and (118), and a velar correspondence in (116) where exceptionality is due to the morpheme-final consonant alternations before vowels in the four languages. The voiceless labiovelar, *kw*, is unchanged in two languages, Ayuru and

Mekens, but disappeared in the other two. The modern examples of *kw* in Tupari are presumably from some other source.

Of the correspondences reconstructed as voiced oral stops, two, *Ø:β:b:b* and *g:—:g:k*, are due to morpheme-final consonant alternations before vowels--probably the only source of *b*. The bilabial is reconstructed as *b instead of β *since* *b>*β is a more natural change than the reverse. There is no clear explanation for the deletion of β in Ayuru, though this maybe due to a following glottal stop which was lost.

The velar correspondences indicate the existence of an oral *g and *gw in Proto-Tupari. The correspondence *g:g:k:k* must be different from *k:k:k:k*, and is reconstructed as *g. This is in harmony with the very general pattern of devoicing in Mekens and Tupari. There are two exceptions to this. The correspondence *g:—:g:hk* in cognate set (70) may be from a medial sequence *hg which blocked devoicing of *g* in Mekens before the *h* disappeared. The correspondence *g:—:g:—* cannot be explained at this time.

The correspondence *gw:β:kw:*β (which does not occur before *o*) occurs morpheme initially and medially. It is reconstructed as *gw because (1) labiovelars are more likely to go to bilabial fricatives or glides than the reverse, and (2) *kw was already seen to have different, though parallel reflexes. Before *o*, *gw seems to have lost its labialization. The correspondence Ay: β:Me: *kw* is unclear since the forms for the other two languages are missing.

Dental affricates **(n)dz* and *ts are reconstructed because no conditioning factor could be found for **(n)d* and *t to become affricates. It is not clear from the data whether the voiced affricate is prenasalized or not, which is an important question. The variation *t/s* in Tupari is perhaps conditioned by the following vowel.

Of the fricatives, the correspondence β:β:β:*β is reconstructed as *β. The correspondence β:*Ø:Ø:Ø* is reconstructed as *β. It only occurs after *i*, and the sequence *i*β does not appear in any of the Makurap, Mekens, or Tupari forms. Tupari seems to have retained a syllable-final preconsonantal *h, as well as a prevocalic glottal stop, *'.

The correspondences reconstructed as *r and as *D are particularly interesting. The phoneme *r* occurs only morpheme medially and finally in the middle of words in the four languages, and shows highly regular correspondences. The correspondence *n:l:—:—* in (104) is perhaps from a nasalized *r. The correspondence *(n)d:c:t:h* is reconstructed as a dental segment *D whose exact phonetic shape is unknown and which is in complementary distribution with *r, which never occurs word-initially, whereas *D only occurs in that position. On the basis of this complementarity and also the morpheme-initial morphophonemic alternations given above, we suggest that *D was a desonorantized variant of *r at some point in the past, perhaps in Proto-Tupi, since the characteristic alternations occur in several different Tupian families. The reflex of *D in Surui, a language of the Mondé Family, is *l* (for example *let* 'name'), which also argues for an original liquid source. The correspondence *—:—:s:s/h* is reconstructed as *D before *i*. The correspondence *nd:Ø/c:h:h* in (54) has no explanation at the present.

The oral palatal glide is stable in final position and reconstructs as *y. However it is rare and unstable morpheme-medially. There are three cognate sets, (2), (11), and (100), in which y or ỹ occur in Ayuru or Makurap corresponding to Ø in Mekens and to a glottal stop or syllable break in Tupari. For these correspondences, not listed in Table 3, a cover symbol, *Y, is given, but no plausible reconstructions can be offered. The palatal nasal is stable, apparently occurring only morpheme initially, and is reconstructed as *ñ. The nasal palatal glide occurs elsewhere and is reconstructed as such.

Looking at the nasalized segments, the simplest and most natural overall explanation for the correspondences observed is that original nasal sonorants were progressively denasalized before oral vowels , and then the denasalized stops were devoiced by the general devoicing change in Mekens and Tupari. This implies a lack of rightward nasalization spread from nasal consonants in Proto-Tupari—otherwise there could not have been oral vowels after nasals.

An alternative which must be rejected is that original voiceless stops before nasal vowels were retained as such in Mekens and Tupari and became nasal sonorants in Ayuru and Makurap. This could not have happened because there are a number of examples of the all voiceless stop correspondences (k:k:k:k, etc.) before nasal vowels (e.g. 13, 44, 78, 83, 99, 106, 115, and 118), and no conditioning factor to explain why these would not also have turned into nasal sonorants in Ayuru and Mekens. The denasalization hypothesis is supported by the existence of similar denasalization in the Gavião language of the Mondé family. Compare, for example, Suruí: mẽt, Gavião: mẽt 'husband' and Suruí: mebe, Gavião: bebe 'peccary'.

There are some irregularities in this picture. Makurap sometimes has voiceless stops instead of the expected prenasalized stops. There appears to be fluctuation in the language in this regard, for example, 'wasp' may be either ŋgap or kap. In Tupari the velar nasal seems to have been eliminated altogether.

Another irregularity is that some nasal vowel correspondences are oddly sporadic. See the discussion of nasal correspondences below.

The correspondence ŋgw:β:kw:β reconstructs neatly as *ŋgw, paralleling *gw. The last two correspondences, before nasal vowels, are less clear. One suspects the source to be *ŋw since that would otherwise be missing from the pattern.

VOWEL CORRESPONDENCES

Since the vowel correspondences are so regular (a:a:a:a, etc.) we will only list the correspondences which are NOT regular. Two irregular correspondences are not included because they probably are due to transcription errors: in cognate set (26), the Mekens form i-kaa should probably be i-kaa ('water-drink'), and in set (123) the Tupari form should probably be ahkop, as in set (103).

TABLE 4: IRREGULAR VOWEL CORRESPONDENCES

Proto-Tupari	Ayuru	Makurap	Mekens	Tupari	Cognate Sets
*ɨ	ɨ	ɨ	i	ɨ	(#__pe/βe) 27, 119
*u	ɨ	o	u	o	(__pi,bi) 30, 110
*ɨ	i	ɨ	i	—	metathesis ? 80
*ɨ	ɨ	Ø	Ø	—	metathesis ? 80
*a/e	a	e	a	e	11
*e/a	e	a	a	—	119
*ĩ/ẽ	ĩ	ẽ	ẽ	—	42

The correspondence *i:ɨ:i:ɨ* is reconstructed as **ɨ* on the hypothesis of neutralization of *ɨ/i* in the specified environment in Mekens. The correspondence *ɨ:u:u:u* is reconstructed as **u* on a similar hypothesis of **u>*Ay: *ɨ* in the specified environment. The next two correspondences, *i:ɨ* *:i:--* and *i:Ø:Ø:--* are perhaps explicable by postulating the metathesis of the *ɨ* in **araɨgwɨ* to after the following consonant in Makurap and its deletion in Mekens. For the last three correspondences, *a:e:a:e*, *e:a:a:--*, and *ĩ:ẽ:ẽ:--*, there is no basis for positing the proto-vowel and these are given as **a/e*, **e/a*, and **ĩ/ẽ*, respectively.

NASAL VOWEL CORRESPONDENCES

Nasal vowels regularly correspond to nasal vowels and are reconstructed as such, for example, 'husband' **mẽt*, Ay: *-mẽt*, Ma: *-mẽ-picop*, Me:-*mẽt*, Tu:*mẽẽt*. However, there are some irregularities. At least one of the irregularities is probably due to a transcription error in cognate set (25) 'dog' (cf. 72). A number of irregularities appear to be due to nasal spread after consonant addition or deletion (cognate sets (84) and (85)) or to differing conditions on nasalization spread (cognate set (90) and (97)). In these cases the oral form is regarded as the original form, later affected by nasalization spread.

Some of the other irregularities show a certain degree of systematicity. They are listed below in Table 5.

Table 5: IRREGULARITIES INVOLVING NASAL VOWELS

Proto-Tupari	Ayuru	Makurap	Mekens	Tupari	Cognate Sets
*Vnasal	Vnasal	Voral	Vnasal	————	17, 53, 71
*Vnasal	Vnasal	Voral	————	Voral	9
*Vnasal	Voral	Vnasal	Vnasal	Vnasal	1, 74
*Vnasal/oral	————	Vnasal	————	Voral	115

The first irregular correspondence, with three examples (17, 53, 71), seems to be due to denasalization in Makurap, since the forms in the other two languages are nasalized. In the second irregular correspondence, we will assume the second and third syllables were oral, but there was nasality on the first which shifted in Makurap. In cognate sets (1) and (74) the Ayuru

forms appear to have been denasalized. For the last correspondence,in (115), there is no clear basis for deciding the reconstruction for 'tucan'.
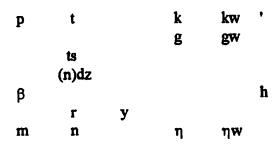
The instability of the irregular nasal correspondences listed above might be explained if nasalization in Proto-Tupari was like that reported for the Tupi-Guaranian language Kaiwá by Harrison and Taylor (1971). In Kaiwá, morphemes are either nasal or oral, but it cannot be predicted which syllable(s) will receive the nasality in the nasal morphemes: both *tupã* and *tũpa* are possible.

SUMMARY

The charts of reconstructed consonant and vowel segments is given below in Table 6 and 7. The palatal stops are excluded from the picture because of lack of evidence about their origins, but they should not be forgotten.

Table 6: PROTO-TUPARI CONSONANTAL SEGMENTS

p	t		k	kw	'
(b)			g	gw	
	ts				
	(n)dz				
β					h
	r	y			
	(D)	ȳ~ñ)			
m	n		ŋ	ŋw	
(mb)	(nd)		(ŋg)	(ŋgw)	

Table 7: PROTO-TUPARI VOCALIC SEGMENTS

Oral:	i	ɨ	u(o)
		e	
			a
Nasal:	ĩ	ɨ̃	ũ(õ)
		ẽ	
			ã

Table 8: UNDERLYING MORPHOPHONEMES OF PROTO-TUPARI

p	t		k	kw	'
			g	gw	
	ts				
	(n)dz				
β					h
	r	y			
m	n		ŋ	ŋw	

What would appear to have been the underlying system in Proto-Tupari is presented in Table 8. In this table *D is considered a variant of *r, with which it is in complementary distribution. The prenasalized consonants are subsumed under the nasals as allophones. The palatal glide includes its variants. The oral series includes only *g and *gw, the bilabial being only derived from *p morpheme finally before vowels.

There are many details to be verified or altered in this picture. Assuming that this preliminary reconstruction is essentially correct, the major changes operating to produce the daughter languages have been (no ordering implied):

- Denasalization of nasal sonorants before oral vowels, a process perhaps already underway in Proto-Tupari.

- Devoicing of obstruents, mainly in Mekens and Tupari.

- Attrition of the original labiovelars by loss, delabialization, or loss of the velar.

- Loss of preconsonantal *h and of glottal stop, except in Tupari.

- Despirantization of dental affricates in Ayuru and Makurap.

- Desonorantization of *r, a process probably initiated long before Proto-Tupari.

Because of the considerable time depth of the Tupari family of languages, the preliminary reconstruction of Proto-Tupari presented here should eventually help cast some light on Proto-Tupi. More data and more phonological and morphological analysis, as well as data from other Tupian families, are needed to refine and broaden the tentative reconstruction presented here.

It is not possible at this time to do a thorough comparison of Proto-Tupari with the languages (or proto-languages) of the other nine Tupian families. Note however some obvious cognates:

Family:	Tupari	Tupi-Guarani	Ramarama	Arikém	Munduruku	Juruna	Mawé
Language:	Proto-Tupari	Proto-T-Guarani	Karo	Karitiana	Munduruku	Xipaya	Mawé
Armadillo	*ndayto	*tatu	yayo	sosi	day^3do^2	dusa	sa'ho
Peccary	*Daotse	------	yate	soytsa	da^3je^2	uza	—

Some of the reconstructed items give a small sample of Proto-Tupari material culture: 'ax', 'basin', 'basket', 'canoe', 'hammock', 'knife', 'salt', and 'seat'. ('Clothing' is an extension of 'skin'.) Domesticated plants include 'cotton', 'maize', 'pepper', 'sweet potato' and perhaps 'tobacco'. ('Banana' probably refers to a wild species which is similar in appearance.)

LIST OF COGNATES AND RECONSTRUCTED FORMS

In the following list, some forms are included, in parentheses, even though they are doubtful as cognates. They are included since some part of them may eventually prove to be cognate or to at least be useful for clarifying the segmentation of the cognates. Note for example, that in (35) 'flea', the Mekens form, ʔp-tsap, supports the segmentation of the Tupari form, ñã-tap.

Extraneous segments may be included without being separated by hyphens if the segmentation is obvious, as in, for example, (29) 'earth'. Where it is useful to indicate

segmentation, as in (34) 'fish', this is done by hyphens, which do not necessarily indicate morpheme boundaries. Morpheme boundaries are indicated (by a +) only when they are relevant to reconstruction and there are strong reasons to posit them, especially, (i) when a known morpheme (such as the prefix *ki-* 'first person plural' in Mekens) is involved, (ii) when considerations of canonical form indicate a morpheme boundary (such as between most consonant clusters), or (iii) when the sound correspondence is what would be predicted by well-attested morpheme-final or initial morphophonemic alternations (such as in (58) 'macaw'). Note in (58) that morpheme boundaries are indicated in the Tupari form, *pet+'a*, and in the reconstructed form, **pet+'a*, but not in the forms for the other three languages, *pera*, since fusion may have rendered the morpheme boundary undetectable in these three languages. There are several morphemes of the form *'V* word-finally in Tupari which may be classifiers, e.g. *pep+'o* 'wing, feather'.

The reconstructions provided aim at accounting for the forms in the daughter languages as much as possible. Inevitably, there are cases such as (24) 'distant' in which there is some irregularity which cannot be reliably distinguished from transcription errors at this point. In these cases a degree of arbitrariness in the reconstruction is unavoidable.

	English	Proto-Tupari	Ayuru	Makurap	Mekens	Tupari
1.	Agouti	*ŋwãkɨ̃ỹã	ŋgwakɨ̃ỹã	mãkɨ̃ỹã	mãkɨ̃ỹã	———
2.	Alligator	*gwaYto	gwayco	βato	kwato	βa.o
3.	Ant, big	*Dat+'a	ndara	———	———	hat+'a
4.	Armadillo	*ndayto	ndato	tayto	tato	———
5.	Assai (palm)	*gwit+'i	gwiri	βirica	kwiri	βit+'i
6.	Ax	*gwi	———	βi	kwi	βii
7.	Banana	*ehpiip	epiip	———	———	ehpiip
8.	Basin	*βãẽkɨt	βãẽkɨt	———	———	βãĩkɨt
9.	Basket, big	*ãŋgerek	ãŋgerek	akẽnẽ	———	ip-akerek
10.	Bat	*ŋwari+'a	ŋgwaria	βa-ca-ria-y	kwari-sa	βari+'a
11.	Blood	*a/eYɨ	o+yaɨ	c+eyɨ	ki+aɨ	e.ɨ
12.	Blow	*ɨβa	y+ɨβa	β-ɨɨ-ka	s-eb-ɨɨ.a	ɨa
13.	Brazil nut tree	*kãnã, *arao	kãnã	araokiee	kãnã	arao.a'
14.	Breast	*ŋẽp	ŋẽp	ŋẽp	———	kẽp
15.	Canoe	*kɨp-pe 'tree-skin'	kɨpe	kɨpe	———	kɨpe
16.	Capibara	(loan)	caβi	caβi	———	———
17.	Cicada	*ŋõtŋõnã	ŋõŋõnã	koko.ɨ̃	kõtkõnã	———
18.	Clothing	*pe	pe	———	ki+pe	pee
19.	Coati	*pi'it	piit	———	piit	pi'it
20.	Cockroach	*a/eβape	aβape	———	eβape	(paba'pairu)
21.	Cotton	*ororo	ororo	ororo	ororo	ororo
22.	Crab	*kera	(koro)	———	kera	kera.a
23.	Deer	*ɨtsɨɨ	ɨtɨɨ	ɨtɨɨ	ɨsɨɨ	———
24.	Distant	*gwetsok	gweeto	βetok	kwesop	(tog-o)

25.	Dog	*äŋwẽko	ãβẽko	amẽko	amẽko	amẽko
26.	Drink	*ka	kap	ka	i-kaa	ɨh-kaa
27.	Duck	*ɨpek	ɨpek	------	ipek	ɨpek
28.	Dust	*ñõ'õ	kɨyt-ñõõp	------	--------	ñõ'õ
29.	Earth	*kɨy	kɨy	kɨy	kɨmãkãy	kɨy
30.	Egg	*upi+'a	ɨpia	c+upia	s+upia	upi+'a
31.	Feather	*pep+'o	peo	------	pebo	pep+'o
32.	Fire	*agopkap	agokap (?)	-----------	----------	kopkaap
33.	Firewood	*agopkap	agopkap	(ocatpot)	(otat)	kopkaap
34.	Fish	*pot	ɨɨ-βoy	pot-kap	--------	ɨh-pot
35.	Flea	*ñõk	ñõk	ñõk	(ĩp-tsap)	ñõ-tap
36.	Foot	*mbi	mbi	mbi	pi	pi
37.	Fowl	*õkɨra	ñ+õkɨra	m+õkɨra	õkɨra	--------
38.	Genipap	*tsigaap	tigaap	(mẽẽncaap)	sigaap	------
39.	Give	*ñũã	ñõã	ñũã	ñõã	ñũã
40.	Good	*poat	poatẽp	------	(isãmẽp)	poat
41.	Hair	*Dap	ndap	------	onẽ-tap	hap
42.	Hammock	*ẽ/ĩnĩ	ĩnĩ	ẽnĩ	ẽnĩ	------
43.	Hand	*mbo	mbo	mbo	kɨ+po-pi	po
44.	Hawk	*kẽỹ+'ã	------	------	kẽỹã	kẽỹ+'ã'
45.	Heart	*ãnõã	m+ãnõã	------	kɨ+ãnõã	ãnõã
46.	Heavy	*potsi	poti	poti	i-potsi	posi
47.	Honey Marten	*ãmãnã	ãmãnã	ãmãnã	------	------
48.	Horn	*apikɨp	------	apikɨp	------	apikɨp
49.	Hot	*ahkop	y+akop	--------	s+akop	ahkop
50.	Humming bird	*mĩnĩt	mĩnĩt	pĩĩt	------	mĩĩt
51.	Husband	*mẽt	õ+mẽt	mẽ-picop	õ+mẽt	mẽẽt
52.	Knife	*ŋgɨtpe	ŋgɨte	------	kɨpe sĩt	putpe sĩĩt
53.	Know	*toã	--------	kiua toa	opoe toã	--------
54.	Leaf	*Dep	kãnã-nde	ep/ cep	hep	hep
55.	Liver	*pia	pia	piat	o+pia	pia
56.	Lizard	*Dako	--------	cako	tako	haaku
57.	Louse	*ãŋgɨp	ãŋgɨp	ãŋgɨp	kɨp	kɨp
58.	Macaw	*pet+'a	pera	pera	pera	pet+'a
59.	Maize	*atsitsi	atiti	atiti	asisi	------
60.	Mandi (fish)	*mõkoa	-----	mõkoa	õkoa	-----
61.	Meat	*ñẽt+'ã	ñẽrã	ñẽrã	õ-ñẽrã	ñẽt+'ã
62.	Monkey, Capuchin	*sahkɨrap	-----	-----	sakɨrap	ahkɨrap
63.	Monkey, Spider	*ãrĩmẽ	-----	(alẽbo)	ãrĩmẽ	ãrĩmẽ

64.	Mortar	*ẽndzɨ	ẽndɨ	———	ẽsɨ	si-ka'
65.	Mother	*ñã	ñã	ñã	ñãã	ñã
66.	Mountain	*(n)dzo	ndoo	ndoa	soo	tuh-tet
67.	Nail	*mbo-ape	———	mbo-ape	o+po-ape	———
68.	Name	*Det	ndet	o+cer-et	———	het
69.	Neck	*gwotkɨp (kɨp='tree' ?)	o+gotkɨp	βotkɨp	o+kotkɨp	otkɨp
70.	New	*pahgop	pagop	———	i-pagop	pahkop
71.	Night	*ŋĩndak	ŋĩndak	gitak	········	········
72.	Ocelot	*ãŋwẽko Dĩĩt	——	——	ãmẽko sĩĩt	ãmẽko hĩĩt
73.	Old	*poot	poor+ia	puul+e	——	poot
74.	One	*kiẽt	kiet	———	———	kiẽt
75.	Other	*nõõ	nõ	nõõt	———	oasĩ-nõõt
76.	Owl	*popoβa	(ɨβao)	popoβa	popoβa	———
77.	Paca	*gwãnãmbiro (*gwãnã+mbiro ?)	βãnãmbiro	———	kwãnãmbiro	———
78.	Partridge	*kwãŋwã	kwãβã	———	kwãmã	———
79.	Path	*pee	pee	pee	pe	ahpe
80.	Peanut	*araɨgwi	araɨgwi	araβɨɨk	arakwi	———
81.	Peccary	*Daotse	———	caote	tause	———
82.	Peccary, collar	*Daotsey	———	caotey	tause	aote'iri
83.	Pepper	*kõỹ	———	kõỹõ	pe-kõõỹ	———
84.	Person	*aotse	aotẽ-nãp	———	aose	———
85.	Piranha	*ipñãỹ (*ip+ñãỹ ?)	ipñãỹ	ipñãỹ	———	ĩñãỹ
86.	Push	*mõrã	õ+mõrã	········	········	i+mõrã
87.	Rotten	*ãnde, *ãkwĩ (*ã+nde, *ã+kwĩ)	(ñ+ãnde)	ãĩt	(s+ããnde)	ã.ĩ
88.	Salt	*ŋgɨɨt	ŋgɨɨt	———	kɨɨt	kɨɨt
89.	Scorpion	*kɨtnĩŋã	kɨnĩŋã	———	kɨtnĩŋã	———
90.	Seat	*ãβõ-pe *ñãp-pe	ãβõpe	ñãpe	ããβo	ñããp
91.	See	*to'a	toa	toa	———	to'a
92.	Seed	*kit	(aβi)	(tambɨt)	ikit	kit
93.	Shell	*ape'	y+ape	ape	———	s+ape'
94.	Skin	*pe	pe	pe-et	ki+pe	pee
95.	Small	*Dĩĩt	———	———	sĩĩt	sĩĩt
96.	Smooth	*atsik	y-atik	———	s-asik	asik
97.	Snail	*ĩỹã	ɨyã	ãmẽỹã	———	———
98.	Snake	*Dat	ndat	cat	———	hat
99.	Sour	*kãỹ	kãỹ	———	pe-kãỹ	———

No.	Gloss	Proto	L1	L2	L3	L4
100.	Speak	*mãỸã	mãỹã	----------	-----------	mã'ã
101.	Stone	*ŋwa+'i	ŋgwai	βa.i	kwai	βa+'i
102.	Straight	*kɨɨt	kɨɨt	kɨɨt	----------	----------
103.	Sun	*ŋgiahkop	ŋgiakop	----------	----------	kiahkop
104.	Surubim (fish)	*ãnõrẽ	ãnõnẽ	ãnõlẽ	-----	------
105.	Sweet Potato	*gwagwo	gwago	βaβo	kwako	βa.o'
106.	Swim	*tĩptĩpnã	tĩptĩpnãã	tĩtĩnã	--------	--------
107.	Tail	*okway	okway	c+oay	s+okway	oay
108.	Take	*ara	--------	--------	y+ara	ts+ara
109.	Tapir	*ɨkwaay	ɨkwaay	ɨay	ɨkwaay	--------
110.	Termite	*ŋgub+i	ŋgɨi	ŋguβa	kubi	kubi
111.	Timbo	*nĩk	nĩk	tĩk	(kĩkĩt)	------
112.	Tobacco	*pitoa	pitoa	(bɨtea)	pitoa	(kɨpea)
113.	Tooth	*ñãāỹ	ñãāỹ	ñãāỹ	ki+ñãỹ	i+ñãỹ
114.	Tree	*kɨp	kɨp	kɨp	kɨp	kɨp
115.	Tucan	*yo/ñõkãt	------	ñõkãt	------	yokãt
116.	Turtle	*mbok+'a	mboga	------	poga	pok+'a
117.	Urucum	*ŋgop	ŋgop-gaap	iko	kob+a kaap	----
118.	Vomit	*ẽkẽt	m+ẽkẽt	n+ẽkẽ	--------	ẽkẽr+ã
119.	Vulture	*ɨβe/ako	ɨβeko	ɨako	iako	------
120.	Wasp	*ŋgap	ŋgap	ŋgap	kap	kap
121.	Water	*igɨ	ɨgɨ	ɨ	ɨkɨ	ɨ-u-k'a (?)
122.	Wing	*pep+'o	peo	--------	ipebo	pep+'o
123.	Year	*ŋgiahkop	ŋgiakop	------	----------	ɨhkop
124.	You	*ẽt	ẽt	ẽt	--------	ẽt

REFERENCES

ALVES, Poliana Maria. 1991. *Análise fonológica preliminar da língua Tupari*. M.A. Dissertation, University of Brasília.

BECKER-DONNER, E.. 1962. *Guaporé-Gebeit*. Akten des 34. Internationalen Americanisten Kongresses (Wien 1960), 124-128.

BRAGA, A. 1992. *A fonologia segmental e aspectos morfofonológicos da língua Makurap (Tupi)*. M.A. Dissertation, State University of Campinas.

CASPAR, F.. 1956. *Tupari*. Trans. E. Northcott. London: G.Bell and Sons, Ltd.

GRAHAM, A., Sue Graham and Carl H. Harrison. 1984. Prefixos pessoais e numerais da língua Sateré-Mawé. *Estudos sobre línguas Tupi do Brasil*, ed. by Robert A. Dooley, *Série Linguística*, n⁰ 11, pp. 175-205.

GREGORES, E. and J. Suáres. 1967. *A description of colloquial Guarani*. The Hague: Mouton & Cia.

HANKE, W., M. Swadesh, and A. Rodrigues. 1958. Notas da fonologia Mekens. *Miscellanea Paul Rivet Octogenario. Dicata*, vol.2:187-217. Mexico.

HARRISON, Carl H. and John M. Taylor. 1971. Nasalization in Kaiwá. *Tupi Studies I*, ed. by D. Bendor-Samuel, pp. 15-20, Norman, Oklahoma: SIL.

JENSEN, C. 1984. *O desenvolvimento histórico da língua Wayampi*. M.A. Dissertation, State University of Campinas.

LEITE, Yonne and Marília Facó Soares. 1991. Vowel shift in the Tupi-Guarani language family: A typological approach. *Language change in south american indian languages*, ed. by Mary Ritchie Key, pp. 36-53. Philadelphia: University Press.

LEMLE, M. 1971. Internal classification of the Tupi-Guarani linguistic family. *Tupi Studies I*, ed. by D. Bendor-Samuel, pp. 107-129. Norman, Oklahoma: SIL.

LÉVI-STRAUSS, C. 1948. Tribes of the right bank of the Guaporé River. *Handbook of South American Indians*, ed. by J. Steward, vol.3:371-379. Washington, DC: Smithsonian Institution.

LOUKOTKA, C. 1950. La parenté des langues du bassin de la Madeira. *Lingua Posnaniensis* (Poznan) 2:123-144

LUNT, Horace G. 1973. Remarks on nasality: The case of Guarani. *A festschrift for Morris Halle*, ed. by Stephen R. Anderson and Paul Kiparsky, pp. 131-139. New York: Holt, Rinehart and Winston, Inc.

MEIRELES, Denise Maldi. 1989. *Guardiães da fronteira: Rio Guaporé, século XVIII*. Petrópolis, RJ: Ed.Vozes.

MÉTRAUX, Alfred. 1948. The tribes of the upper Guaporé River. *Handbook of South American Indians*, Vol 3: *The tropical forest tribes*, ed. by Julian Steward, pp. 143-253. Washington, DC: Smithsonian Institution.

MOORE, Denny. 1984. *Syntax of the language of the Gavião Indians of Rondônia, Brazil.* Doctoral dissertation, City University of New York.

RODRIGUES, A. 1984/85. Relações internas na família linguística Tupi-Guarani. *Revista de Antropologia.* 27/28:33-53. São Paulo.

SCOLNIK, R. 1955. Observaciones sobre el estado sanitario de algunas tribus indígenas del Brasil Central. *America Indigena XV* (2):89-95.

REPORT 8

SURVEY OF CALIFORNIA AND OTHER INDIAN LANGUAGES

Proceedings of the Meeting of

the Society for the Study of the

Indigenous languages of the Americas

July 2-4, 1993

and the Hokan-Penutian Workshop

July 3, 1993

REPORT 8

SURVEY OF CALIFORNIA AND OTHER INDIAN LANGUAGES

Proceedings of the Meeting of the

Society for the Study of theIndigenous languages of the Americas

July 2-4, 1993

and the Hokan-Penutian Workshop

July 3, 1993

Both held at the 1993 Linguistic Institute at Ohio State University in Columbus, Ohio

Margaret Langdon
Volume Editor

Leanne Hinton
Series Editor

This volume is dedicated to

JAMES E. REDDEN

on the occasion of his retirement

for his enduring commitment to the publication

of the results of research on Yuman, Hokan, Penutian and

other American Indian languages

and also

for his contributions to the

documentation of the Hualapai language

INTRODUCTION

This volume includes a number of papers presented in conjunction with the 1993 Linguistic Institute at Ohio State University in Columbus, Ohio, at two conferences on American Indian Languages: the meeting of the Society for the Study of the Indigenous languages of the Americas, held July 2-4, 1993, and the meeting of the Hokan-Penutian Workshop, held on the morning of July 3, 1993.

This continues a tradition initiated during the Linguistic Institute at the University of Arizona in 1988, of offering conferences on American Indian languages during the summer Linguistic Institute of the Linguistic Society of America, which is held every two years on the campus of the host institution. The interaction thus afforded between students and faculty of the Institute and specialists in American Indian languages has proved mutually profitable.

We gratefully acknowledge the dedication of Catherine Callaghan in making these meetings thoroughly enjoyable, as well as the hospitality of Ohio State University.

The Hokan-Penutian Conference has a tradition of meetings dating as far back as 1970, when the first Hokan Conference was hosted by Margaret Langdon at UCSD. Since 1976, the Hokan (and later Hokan-Penutian) Conference proceedings were published most years by James Redden, as part of the series *Occasional Papers on Linguistics*, out of the department of Linguistics at Southern Illinois University at Carbondale. Beginning this year, with James Redden's retirement, the reports of these conferences are being published as part of the *Survey Reports* out of the Survey of California and Other Indian Languages at the University of California at Berkeley.

Margaret Langdon
Volume Editor

Leanne Hinton
Series Editor

.

CONTENTS

GENERAL

SOUTH AMERICA

HOKAN-PENUTIAN WORKSHOP