Genetic affiliation of the language of the Indians Aurê and Aurá

Antonio Augusto Souza Mello

University of Brasilia
Onderzoekschool CNWS, Postbus 9515, 2300 RA Leiden, Holanda

Abstract

This article classifies the language spoken by two Indians, known as Aurê and Aurá (A&A), who were found alone in the woods west of Marabá (State of Pará, Brazil) in 1987, being probably the last survivors of an exterminated tribe. Words lists collected from them revealed that their language belongs to the Tupi-Guarani linguistic family (Silva 1987). Comparisons with the reconstructed Proto-Tupi-Guarani and at least one language of each subgroup of the family were done using WORDSURV (Wimbish 1989), a computer program that helps to identify and evaluate phonological change. Attention was given also to semantic change. The evidence for the classification of A&A language was worked out using a lexical database for the Tupi-Guarani family, which includes 32 languages, and, for the best documented ones, 514 lexical items. The evidence presented, both phonological and lexical, obtained with an application of three different methodologies (two qualitative and one quantitative), shows that A&A language is very likely a member of subgroup VIII of the classification of Rodrigues (1984/85), which includes Wayampi, Emerillon, Guajá, Urubú and Anambé, being apparently closer to Guajá.

Key words: Tupi-Guarani, Guajá, comparison.

Filiación genética de la lengua de los indios Aurê y Aurá

Resumen

Este artículo clasifica la lengua hablada por dos indios, conocidos como Aurê y Aurá (A&A), que fueron encontrados solos en los bosques al oeste de Marabá (Estado de Pará, Brasil) en 1987, y que son probablemente los últimos sobrevivientes de una tribu exterminada. Las listas de palabras recogidas de ellos revelaron que su lengua pertenece a la familia lingüística tupí-guaraní (Silva 1987). Las comparaciones con el tupí-guaraní reconstruido y con al menos una lengua de cada sub-grupo fueron hechas utilizando WORDSURV (Wimbish 1989), un programa de computación que ayuda a identificar y evaluar el cambio fonológico. También se prestó atención al cambio semántico. La evidencia para la clasificación de la lengua A&A se procesó utilizando una base de datos léxica para la familia tupí-guaraní, la cual incluye 32 lenguas y, para las mejor documentadas, 514 ítemes lexicales. La evidencia presentada, tanto fonológica como léxica, obtenida con la aplicación de tres diferentes metodologías (dos cualitativas y una cuantitativa), muestra que la lengua A&A es con mucha probabilidad un miembro del sub-grupo VIII de la clasificación de Rodrigues (1984/85), el cual incluye las lenguas wayampi, emerillon, guajá, urubú y anambé, siendo evidentemente más cercana al guajá.

Palabras claves: tupí-guaraní, guajá, comparación.

1. INTRODUCTION

The purpose of this article is to classify the language spoken by two Indians, known as Aurê and Aurá, who were found alone in the woods west of Marabá (State of Pará, Brazil) in 1987 and are probably the last survivors of an exterminated tribe.

Some short lists collected from them revealed that the language of Aurê and Aurá (A & A) belongs to the Tupi-Guarani linguistic family (Silva 1987). Comparisons with the reconstructed Proto-Tupi-Guarani and at least one language of each subgroup of the family were done with

the help of Wordsurv (Wimbish 1989), a computer program that helps
to identify and evaluate phonological change. Attention was given also
to semantic change. Evidences both phonological and lexical shows that
A & A language belongs very likely to subgroup VIII of the classification
of Rodrigues (1984/85), which includes Wayampi, Emerillon, Guajá,
Urubú and Anambé, and it is apparently closer to Guajá.

The evidence for the classification of A & A language was worked
out using a lexical database for the Tupi-Guarani family, which includes
32 languages, and, for the best documented ones, 514 lexical items[1].

2. PHOLOLOGICAL DEVELOPMENT OF A&A LAN-GUAGE

The Compass module of Wordsurv was applied to obtain the
phonological correspondences between Proto-Tupi-Guarani and A&A
language. The results are given in the following shape:

[1]   The languages od the Tupi-Guarani database, the abreviations and respec-
tive fonts are: Guarani Paraguaio - GUP (Ortiz Mayans 1941, Guaschi
1948), Guarani Mbyá - GUN (Dooley 1982), Chiriguano - TXI (Dietrich
1980, Schuchard 1979), Guayakí - GUK (Cadogan 1968), Guarani Antigo
- GAN (Montoya 1876, Rodrigues 1990), Xetá - XET (Rodrigues 1957),
Guarayo - GUY (Hoeller 1932), Sirionó (Schermair 1958), Tupinambá -
TUP (Barbosa 1967a, Barbosa 1967b), Lingua Geral Amazônica - YRL
(Grennand 1989), Kokama - KOK (Faust 1978, Espinosa 1990), Asurini
do Trocará - ASU (Nicholson 1982), Parakana(- PAK (Bacon 1985),
Tembé (Boudin 1978), Suruí - SRU (Bacon 1985), Tapirapé - TAF
(Almeida 1983), Kayabí - KYZ (Dobson 1973, 1976, 1988), Asurini
do Xingu (Coatinemo) - ASX (Nicholson 1982), Araweté (Bacon
1985, Balée & Moore 1992), Apiaká - API (Dobson 1978),
Parintintin - PAT (Betts 1981), Amundava - AMD (1991), Uruc-
wauwau - UWW (Cardoso 1990), Tenharín - TEH (1977),
Kamayurá - KAY (Harrison 1984), Wayampí - WYP (Jensen 1989,
Grennand 1991, Olson 1978), Emerillon - EME (Jensen 1979),
Guajá - GUJ (Cunha 1986), Urubú-Kaapór - URB (Kakumasu
1988) e Anambé - ANA (Julia(((o 1993) ,Aurê and Aurá language
(Silva 1989, 1991, 1992, Welch & Facundes 1989, Baléc 1987) and
Proto-Tupi-Guarani - PTG (Lemle 1971, Jensen 1989, Mello 1992).

COMPASS RESULTS FOR:

Proto-Tupi-Guarani

Aurê and Aurá

CORRESPONDENCES CHART:

A-6	Amt	Strength	DD	Records (1st 40)
a-a	61	1.00	0	20 25 26 47 48 55 67 69 80 88 89 100 (.......)
u-u	43	1.00	0	12 25 53 55 56 67 89 126 147 (.......)
(...................)				
e-a	8	0.53	1	92 107 175 197 328 (......)
m-	6	0.40	1	58 69 191 220 272 382
(...................)				

The first column gives the pairs of corresponding phonemes. The second, labelled Amt for "Amount", gives the number of times the correspondence occured. The third column, the strength index, is a number ranging from +1.0 to -1.0 which represents the likelihood that the correspondence is a result of a regular sound change. The fourth column reports the degree of difference for the correspondence as recorded in the Settings module. The final column lists the numbers of first fourty database records presenting the correspondence, which permit to look for examples of the correspondences, such as are needed to check the conditioning environments.

2.1. Phonological change

The phonological changes from Proto-Tupi-Guarani to A&A language, on which the classification of the latter is based, are given below:

2.1.1 Consonants

1. Loss of final consonants

a) *k > ø / __ #

   *jetik > jiti 'sweet potato'

   *iβak > iwe 'sky'

   *kutuk > kutu 'to pierce'

   *mani?ok > mani?a 'manioc'

b) $*m > \emptyset$ / __ #

*enem > ine^n [2] 'beetle'

*panam > pana 'butterfly'

*?am > a^n 'to stand'

*petim > peta^n 'tobacco'

c) $*n > \emptyset$ / __ #

*aman > ama^n 'rain'

*pitun > pitu^n 'night'

*tucan > toko^n 'toucan'

d) $*\eta > \emptyset$ / __ #

*akaŋ > aką^n 'head'

e) $*ß > \emptyset$ / __ #

*u?iß > u?i 'arrow'

*juta?iß > jutai 'jatobá tree'

*uß > u 'father'

f) $*r > \emptyset$ / __ #

*?ar > ?a 'to fall'

*potir > puti 'flower'

*eir > ci 'honey'

*por > pa 'to jump'

2. $*ß > w$ / V__V

*araße > arawe 'cockroach'

*iwak > iwe 'sky'

*aßa > aße 'man'

*jaßoti > awuti 'tortoise'

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2   The symbols a^n, e^n, i^n, o^n and u^n correspond to nasal vowels.

3. *ts > ø

*talsiß > tai 'ant'

*tajatsu > tajau 'peccary'

*kitsaß > kic 'hammok'

*kwaratsi > korai 'sun'

*tsurußi > urui 'surubim fish'

4. *tʃ > h , ø

a) tʃ > ø / V__V

*tupatʃam > tupaⁿ 'rope'

*jatʃi > jai 'moon'

*otʃu?u > u?u 'he bites'

b) tʃ > h / # __

*tʃe > he 'I'

*tʃi > hi 'mother'

5. *pj > tʃ

*atsepjak > atʃa 'I see'

2.1.2. Vowels

1. *e > a / __ (C) #

*akʲer > aka 'I sleep'

*pirwer > pira 'skin'

*jakare > jakara 'alligator'

*pe > pa 'way'

2. *a > e / __ *C #

*arar > are 'macaw'

*kwar > kwe 'hole'

*aßa > awe 'man'

*iar > ie 'canoe'

*kaß > ke 'wasp'

*pak > pek 'paca'

3. *a > iⁿ / __ #

*wata > watiⁿ 'to walk'

*tata > tatiⁿ 'fire'

*i?a > ii ⁿ 'fruit'

4. $*i > i$

$*?i > ?i$ 'water'

$*iwak > iwe$ 'sky'

$*ji > ji$ 'ax'

$*mitu > mitu$ 'mutuin bird'

5. $*u > o / \_\_ CV\#$

$*nupa^n > nopo^n$ 'to hit'

$*tu?i > to?i$ 'parrot'

$*nupa^n > nopo^n$ 'to hit'

$*tukan > toko^n$ 'toucan'

6. $*o > a / \_\_ (C)\#$

$*pepo > pepa$ 'wing'

$*ok > a$ 'house'

$*po > pa$ 'hand'

$*mani?ok > mani?a$ 'maniok'

$*por > pa$ 'to jump'

7. $*o > u / \_\_ CV\ [+high]$

$*tukan > toko^n$ 'toucan'

$*tupa^n > topo^n$ 'thunder'

$*nupa^n > nopo^n$ 'to hit'

2.2. Inclusion of A&A language in one of the subgroups of Rodrigues (1984/85)

According to the internal classification of Rodrigues, the languages of subgroup VIII have had the following phonological changes from Proto-Tupi-Guarani:

a) Partial loss of final consonants

b) Fusion of $*t\int$ and $*ts$, both changed to h or ø (zero)

c) Change from $*pw$ to kw

d) Change from $*pj$ to s

e) Maintainance of $*j$

A&A language presents four of these caracteristics. As to item (a), we have a complete loss of final consonants. This fits well subgroup VIII, but fits also subgroup I and II.

As to item (b), A&A language has inconditionally changed *ts to ø and has split *tʃ to h at the word beginning and ø intervocalically. Both cases fit subgroup VIII, but they also fit subgroup V and VII.

As to item (c), it should be noted first, that some languages of subgroup VIII, such as Wayampí, have split *pw into pw and kw, the latter only on stressed syllables (Rodrigues, Personal Comunication). For A&A language we have only one instance, *peraß > pwara[h] 'to recover', where *pw is conserved in an unstressed sylable, just as in Wayampí **pwera.**

As to item (d), whereas some languages of the subgroup VIII, such as Wayampí and Urubú, have s, another member of the subgroup, Guajá, has tʃ; and A&A language has also tʃ .

As to item (e), finally, A&A language maintains j, what fits subgroup VIII. Although none of the five features mentioned by Rodrigues is for itself exclusive of subgroup VIII, the whole set is characteristic for this subgroup. The A&A language differs from the other subgroups as follows: from I for having retained *pj and partially *pw, from II for having changed *ts to ø and *tʃ to h and ø . The shared features of A&A language, Proto-Tupi-Guarani and the subgroups of the classification of Rodrigues are shown below:
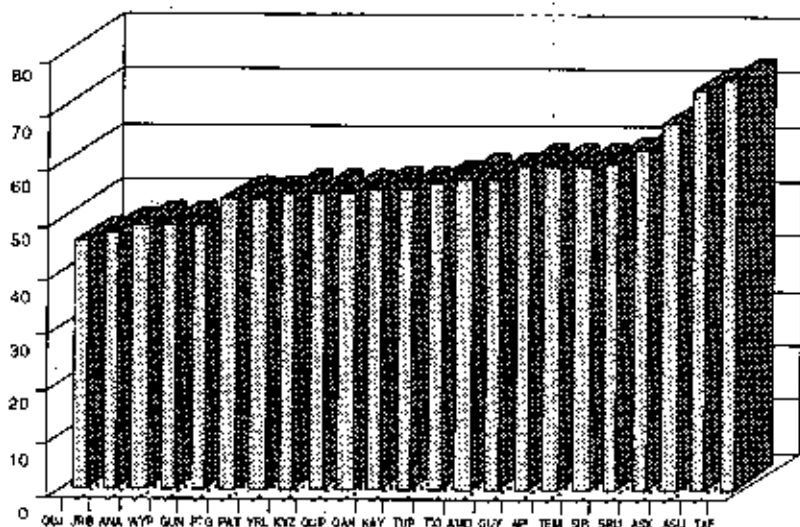
PTG	A&A	I	II	III	IV	V	VI	VII	VIII
*C#	ø	ø	ø	C#	C#	C#	C#	C#	ø
*ts	ø	h,ø	ts,s	s	h	h,ð	h	h,ø	h,ø
*tʃ	h,ø	tʃ,ts,s	ts,s	s	h	h,ø	h	h,ø	h,ø
*pw	pw	kw	kw	pw	kw	kw,ɸ	hw,h	ɸ	pw,kw
*pj	tʃ	tʃ,ʃ	pj	pj	tʃ,ts,z	s	pj	ts	tʃ,s
*j	j	j	j	j	tʃ,ts,s,z	dʒ	j	j	j
Number of shared features		(4)	(2)	(2)	(2)	(2)	(2)	(3)	(6)

3. APLICATION OF PHONOSTATISTICS

The phonostatistical method used in Wordsurv is based in a quantity called "degree of difference" (or DD), which is a number of minimal steps that would be required to change one sound to another. For example, in the phonological change t> tʃ > ʃ, considering t > ʃ, the DD is 2.
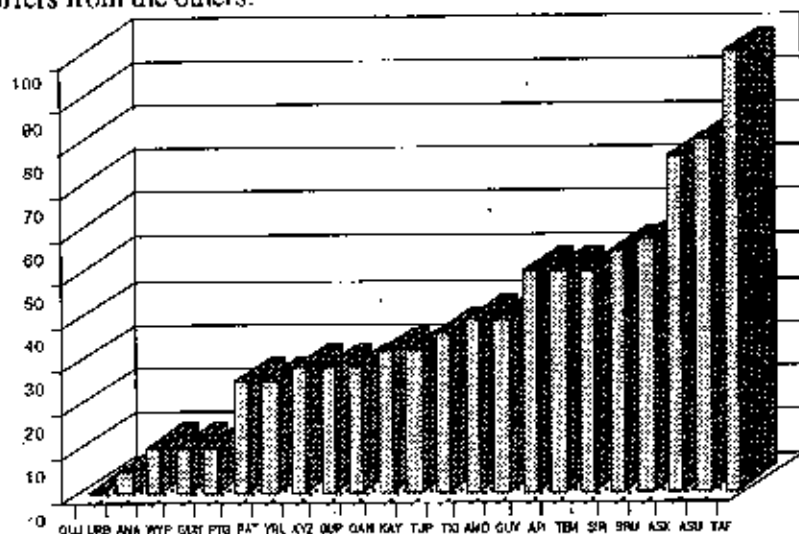
Wordsurv allows the user to assign DD values to corresponding pairs in the Settings module. After that, applying the Shared module, this operation will check all the data and present its results in three matrices. The first, Degrees, is a summation of all the DDs for all the phonological correspondences in all the cognate words between the same word lists. The second, Correspondences, is the total number of correspondences in all the cognate words between two word lists. The third matrix, Ratio, is calculated as 100 times the Degrees value divided by the correspondences value. "This average is the indicator by which pairs of word lists of word lists may be compared to access their relative phonetic divergence. Unlike cognate percentages, the lower the ratio the closer the similarity between the two word lists" (Wimbish 1989).

According to these calculations utilizing in the Tupi Guarani lexical database, we found out the languages closer to A&A language. The results are presented in the following graphics:

Graphics 1. Absolute ratio of phonological divergence.

Considering the closest language with the ratio = 0, and the most different one with the ratio =100, we can see better how A&A language differs from the others:

Graphics 2. Relative ratio of phonological divergence.

4. LEXICAL DIVERGENCE

The number of shared features, as we have seen, indicated a stronger relationship of A&A language with subgroup VIII (6 of 6 features), but accused also a high number of shared features with subgroup I (4 out of 6). When we compare specifically some cases of lexical divergence between subgroups VIII and I, A&A language agrees with VIII. Some instances of this are the following:

a) Tapir: Subgroup I is the only of the family to have a different name for 'tapir': GAN, GUN, GUP moreßi, TX1 morewi, GUK brevi. All the other subgroups, including VIII, have **tapi?ir** or phonological variants of this. A&A language has **tapi?i**.

b) Howler monkey: Again subgroup I has a different name: GUP, GUN, GAN **karaja**, GUK **kraja**. All others have **wariß, akiki** or phonological variants of these names. A&A language has **wari**.

c) Stone: All subgroups have **ita,** but some languages of subgroup VIII, such as Wayampi and Emerillon, had changed **ita** to **takuru.** A&A language has a phonological variant of the same word: **taku.**

5. CONCLUSION

With the evidences presented above, obtained with an application
of three different methodologies (two qualitative and one quantitative),
A&A language could be classified as a member of subgroup VIII of the
classification of Rodrigues.

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