

Genealogical relations and lexical distances within the Tupian linguistic family Relações genealógicas e distâncias lexicais na família linguística Tupí

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Abstract: In this paper we present the first results of the application of computational methods, inspired by the ideas in McMahon & McMahon (2005), to a dataset collected from languages of every branch of the Tupian family (including all living non-Tupí-Guaraní languages) in order to produce a classification of the family based on lexical distance. We used both a Swadesh list (with historically stabler terms) and a list of animal and plant names for results comparison. In addition, we also selected more (HiHi) and less (LoLo) stable terms from the Swadesh list to form sublists for independent treatment. We compared the resulting NeighborNet networks and neighbor-joining cladograms and drew conclusions about their significance for the current understanding of the classification of Tupian languages. One important result is the lack of support for the currently discussed idea of an Eastern-Western division within Tupí.

Keywords: Tupian family. Distance-based methods. Historical linguistics. Internal classification. Lexical sublists.

Resumo: Neste trabalho, apresentamos os primeiros resultados da aplicação de métodos comparativos computacionais, inspirados nas ideias de McMahon & McMahon (2005), a um conjunto de dados de línguas de todos os ramos da família Tupí (incluindo-se todas as línguas não-Tupí-Guaraní ainda vivas), com o intuito de produzir uma classificação da família com base em distância lexical. Usamos uma lista de Swadesh (composta por termos historicamente mais estáveis) e uma lista de nomes de plantas e animais para comparação de resultados. Além disso, também selecionamos os termos mais (HiHi) e menos (LoLo) estáveis da lista de Swadesh para formar sublistas para tratamento independente. Comparamos as redes NeighborNet e os cladogramas neighbor-joining resultantes, derivando conclusões sobre o seu impacto na compreensão atual da classificação das línguas Tupí. Um importante resultado é a falta de apoio para a ideia, atualmente em discussão, da existência de uma divisão leste-oeste dentro da família.

Palavras-chave: Família Tupí. Métodos de distância. Linguística histórica. Classificação interna. Sublistas lexicais.

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INTRODUCTION

The Tupian family is one of the largest linguistic groups of South America, composed of about 40-45 languages that are traditionally classified into ten branches: Arikém, Awetí, Jurúna, Mawé, Mondé, Mundurukú, Puruborá, Ramaráma, Tuparí, and Tupí-Guaraní. Five of these branches (Arikém, Ramaráma, Puruborá, Mawé, and Awetí) are composed each of a single living language today. On the other extreme, Tupí-Guaraní is the largest and most widespread group, with 22 living languages and around 40 dialectal variants that are spoken in an extensive geographical area covering a large part of Brazil and adjacent regions in Argentina, Paraguay, Peru, Bolivia, and French Guiana (Moore; Galucio; Gabas Jr., 2008). The Jurúna and Mundurukú branches have two languages each, which are very closely related in both cases. Thus, besides Tupí-Guaraní, the Mondé (three languages and several dialects) and Tuparí (five languages) are the only two branches still maintaining a greater internal diversity.

The internal classification of the Tupian language family that has emerged in recent years is presented schematically in Figure 1. The depicted tree departs from the ten branches previously assigned to the family (Rodrigues, 1984/85; Rodrigues; Cabral, 2012). It shows the results of more recent studies that propose intermediary stages in the derivation from Proto-Tupí and the internal classification of the branches, according to the application of the Comparative Method and the analysis of reoccurring sound change patterns (Drude, 2006; Fargetti; Rodrigues, 2008; Gabas Júnior, 2000; Galucio; Gabas Júnior, 2002; Galucio; Nogueira, 2012; Meira; Drude (this volume); Moore, 2005; Moore; Galucio, 1994; Picanço, 2005, 2010; Rodrigues, 2005, 2007; Storto; Baldi, 1994). A large part of these studies reflect the results of the ongoing Tupí Comparative Project at the Museu Paraense Emilio Goeldi, in cooperation with Tupian specialists from various institutions, since 1998¹.

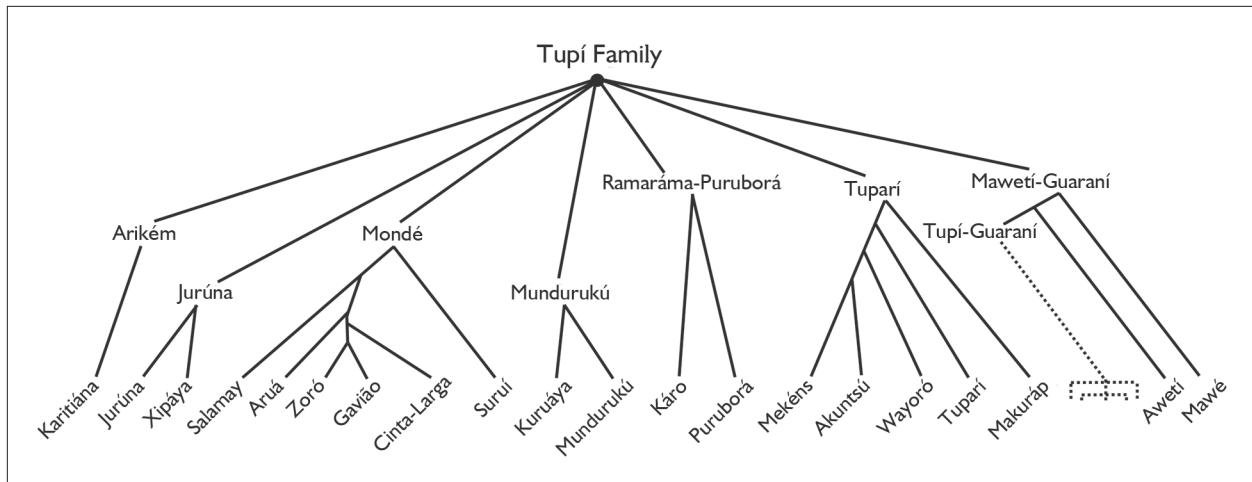


Figure 1. Internal classification of the Tupian family².

¹ The permanent members of the initial Tupí Comparative Project are Ana Vilacy Galucio for the Puruborá and Tuparí branches; Carmen Rodrigues for the Jurúna branch; Denny Moore for the Mondé branch; Gessiane Picanço for the Mundurukú branch; Luciana Storto for the Arikém branch; Nilson Gabas Jr. for the Ramaráma branch; Sebastian Drude for the Awetí branch; and Sérgio Meira for the Mawé and Tupí-Guaraní branches. Other members that have collaborated with specific languages include Didier Demolin and Fernanda Nogueira for Wayoró, and Mariana Lacerda for Suruí of Rondônia.

² The dotted lines under the Tupí-Guaraní node indicate that the complete list of languages does not fit into the reserved space in the diagram, and that we regard the validity of the differing classifications of its branches as still unresolved.

Five of the ten Tupian branches (Arikém, Mondé, Ramaráma, Puruborá, and Tuparí) are spoken exclusively in the area corresponding to the current state of Rondônia (Brazil), in a region that has been proposed as the original homeland of the Tupian languages and peoples due to the great time depth of Tupian ethnolinguistic diversity there (Métraux, 1928; Rodrigues, 1964; see also Wichmann; Müller; Velupillai., 2010, p. 258)³. The other five branches are spread across different regions⁴. Tupí-Guaraní is spoken in many parts of Brazil and some of its adjacent countries, while the other four are limited to distinct areas in Brazil: Awetí in the Parque Indígena do Xingu (State of Mato Grosso), Mawé in the lower Tapajós and Madeira rivers (Amazonas state), Jurúna (Jurúna branch) in the Parque Indígena do Xingu, Xipáya (Jurúna branch), traditionally spoken along the Xingu River, persists in the city of Altamira in the State of Pará, and Mundurukú in the middle Tapajós and Madeira rivers (in the states of Pará and Amazonas). Kuruáya, the second language in the Mundurukú branch, traditionally localized in the region of the Xingu River, was spoken in recent years in the city of Altamira by only three remaining elders, who have since passed away.

This paper presents the result of a first collaborative lexicostatistical and phylogenetic analysis applied to the entire Tupian family. The current trend in computational phylogenetics favors the so-called (Bayesian) character-based evolutionary methods (Dunn, 2015), which have been highly successful in the investigation of linguistic relatedness (cf. Gray; Atkinson, 2003; Gray; Drummond; Greenhill, 2009; Walker; Ribeiro, 2011; Birchall; Dunn; Greenhill, to appear). This study follows an earlier distance-based methodology as outlined in McMahon, A.; McMahon, R. (2005) with some modifications. While distance-based methods have been gradually replaced with character-based ones in computational historical linguistics, given that statistical methods are relatively new to the field of Amazonian languages, it seemed interesting to us to start with one of the most familiar assumptions, namely that lexical distance between basic vocabulary items among related languages is an accurate approximation of phylogenetic relations. In subsequent papers, we will apply character-based methods in the hope that a comparison of their results with those of the distance-based methods and with the results of ongoing traditional historical-comparative studies on Tupian languages would not only shed more light onto and produce further insights into the history and classification of the Tupian family, but also provide further material for the (currently ongoing) discussion and comparison of the phylogenetic methods themselves.

We report here the first results and conclusions from the application of this methodology to data from all of the 17 currently spoken languages (plus two additional dialects) that constitute the nine Tupian branches outside of Tupí-Guaraní, including first-hand data for Akuntsú, Kuruáya, Puruborá and Salamāy, plus four Tupí-Guaranian languages. These results include (a) a classification of the whole family, (b) specific classifications of the more diverse branches (Tuparí, Mondé, Mawetí-Guaraní), and (c) conclusions on the differences observed with different (sub)sets of words (Tupí-HiHi vs. Tupí-LoLo sublists, animal and plant names vs. Swadesh list) are used as the input for our statistical analyses. In addition to contributing to ongoing discussions on the classification and history of Tupian languages, our results also suggest that the use of semantically-based sets of words is a strategy worth investigating, which we intend to do in future work.

³ Wichmann *et al.* (2010) place the Tupian hypothetical homeland at 8°S, 62°W, which also corresponds to the same general area that has been previously proposed by other scholars (Métraux, 1928; Rodrigues, 1964).

⁴ The unit formed by Mawé, Awetí, and the Tupí-Guaraní branches has been proposed as a single higher sub-branch, as shown in Figure 1 (Corrêa da Silva, 2007, 2010; Dietrich, 1990, Drude, 2006; Rodrigues, 1984/85; Rodrigues; Cabral, 2002; Rodrigues; Dietrich, 1997; Walker *et al.*, 2012): the Mawé-Awetí-Tupí-Guaraní or “Mawetí-Guaraní” branch, a shortened form already used in Drude (2006), Meira (2006), and further in the present work.

DATA AND METHODS

This study followed the methodology outlined in McMahon, A.; McMahon, R. (2005), with a few modifications discussed below. First, a sample of 23 Tupí languages was chosen, consisting of four Tupí-Guaraní languages and 19 varieties from the other Tupian branches: the 17 existing non-Tupí-Guaraní languages, plus three dialects of the same language (Zoró, Aruá and Gavião are mutually intelligible). In the cases of Akuntsú, Kuruáya, Puruborá and Salamã, first-hand unpublished data was used (see the Appendix). The Tupí-Guaraní branch was represented by only four languages (Urubú-Ka'apór, Paraguayan Guaraní, Tapirapé, and Parintintín) because, even though the internal classification of this branch has not reached consensus among specialists (cf. Mello, 2000, 2002; Rodrigues; Cabral, 2002; Schleicher, 1998), it is a well-established branch. The Tupí-Guaraní languages are so closely related to each other to the point that one may wonder whether many of them are languages or actually dialects of each other. Thus, even if there is a possibility on the contrary, we assumed that Tupí-Guaraní languages would not significantly influence the classification of other, much less closely related, Tupian languages⁵.

A list of 100 diagnostic meanings, considered to be more stable over time and less subject to cultural influences (the Swadesh list, as given in McMahon, A.; McMahon, R. (2005), originally proposed in Swadesh (1955), with a few minor adaptations; e.g., since there usually are two first person plural pronouns, Swadesh's third item, *we*, was changed to *we-Inclusive*), was compiled for these languages from the available sources for the Tupí-Guaraní languages (Almeida *et al.*, 1983; Betts, 1981; Cadogan, 1992; Dooley, 1998; Guasch; Ortiz, 1996; Kakumasu, J.; Kakumasu, K., 2007; Lopes, 2009; Praça, 2007) and field data collected by the authors (all the other languages). A similar list of 90 plant and animal names was also collected



Map 1. Geographic distribution of languages represented in this study⁶.

⁵ In addition, there already is a more in-depth study of Tupí-Guaraní interrelations with phylogenetic (Bayesian) methods (Michael *et al.*, to appear).

⁶ We thank Love Eriksen for the map.

for comparative analysis with the results from the Swadesh list (see further details below). Inevitably, there were gaps due to missing words in the available data. The number of attested words per language in the sample is indicated in Table 1; the word lists and our cognacy judgments are given in the Appendix (Swadesh list in Appendix 1, plant and animal names in Appendix 2).

The cognacy judgments reflect our consensus opinion for each set of words having the same translation, which we divided into subsets consisting only of (to the best of our judgment) cognate words. For instance, the words for 'I' (listed in Appendix 1) were sorted out into three sets, one containing cognate words probably reconstructable as **on* (perhaps **o-en*) for Proto-Tupian, a second one with cognate words that suggest a form **uito*, reconstructable at most for Proto-Mawetí-Guaraní, and a third one with reflexes of a form **ife* at the Proto-Tupí-Guaraní level. For each pair of languages, the number of shared cognates was determined. Because of the gaps, the results were normalized to a 0-100 percentage scale⁷. This normalization has some consequences⁸. The results are given in Table 5 (Sec. 3 below).

For each meaning in the Swadesh list, a letter (A, B, C...) was assigned to each cognate set found in this meaning for each sampled language, as illustrated in Table 2. Languages that share a cognate for the same meaning are assigned the same letter for that meaning. For example, the letter C in the first meaning ('I') in Mundurukú, Akuntsú and Gavião, for instance, implies that these three languages have cognate words for 'I' (Mundurukú *õn*, Akuntsú *õn*, Gavião *õõt*). The cognate coding of Parintintín, for instance, is AAADCBAAACCC..., while Akuntsú, in turn, has CBEFK?C?G... (where question marks represent missing words).

The complete version of Table 2 - a matrix of 23 cognate codings (one per language) x 100 meanings—was the basic input data for an analysis using *SplitsTree* (version 4.13.1, see Huson; Bryant, 2006), from which the program

Table 1. Number of attested words per language: Swadesh list and Plants and Animals (P/A).

	Swadesh	P/A		Swadesh	P/A
PARAGUAYAN GUARANÍ	100	081	XIPÁYA	097	076
AWETÍ	100	085	ARUÁ	097	072
PARINTINTÍN	100	088	ZORÓ	096	083
MUNDURUKÚ	099	085	KÁRO	098	090
KARITIÁNA	099	087	JURÚNA	095	080
MAWÉ	099	090	SURUÍ	094	089
GAVIÃO	099	086	KURUÁYA	092	066
WAYORÓ	098	089	TAPIRAPÉ	089	-
MAKURÁP	098	087	SALAMÁY	084	065
MEKÉNS	098	088	PURUBORÁ	084	077
TUPARÍ	098	089	AKUNTSÚ	074	062
URUBÚ-KA'APÓR	097	084			

⁷ For instance, suppose that, for two languages L_1 and L_2 , respectively 90 and 80 meanings of the Swadesh list were found in the available data, and that only 75 of these were the same meanings in both languages; furthermore, suppose that, of these 75 pairs of synonymous words, only 60 pairs consisted of cognate words, in the authors' judgment. In this case, the percentage of shared cognates between languages L_1 and L_2 would be $60/75 = .8$ or 80%, which would be shown in Table 5 as 080.

⁸ The normalization assumes that the missing items would have the same average cognacy rate as the known items, which is not necessarily the case. In fact, the languages with gaps of 8% or more and a small number of speakers have greater-than-average cognacy rates with languages outside of their branches (Akuntsú 37.8%, Kuruáya 35.2%, Salamáy 32.8%; Puruborá, with 30.4%, is the only one not above the average). For a possible explanation, see the final paragraph in the Section Similarity (shared cognates) matrix.

Table 2. Partial view of the cognate codings for Tupian languages.

	1. I	2. YOU	3. WE INCL.	4. THIS	5. THAT	6. WHAT	7. WHO	8. NOT	9. ALL	10. MANY	11. ONE
PARINTINTÍN	A	A	A	D	C	B	A	A	C	C	C
MUNDURUKÚ	C	B	D	G	F	C	A	J	F	R	F
AKUNTSÚ	C	B	E	F	K	?	?	C	?	?	G
GAVIÃO	C	B	I	I	I	E	H	C	L	M	I

calculated distance (similarity) matrices on the basis of percentage of shared cognates, like Table 5 below, and then computed the equivalent diagrams. Network diagrams were produced with the NeighborNet algorithm (Bryant; Moulton, 2004), with the Variance parameter set to Ordinary Least Squares.

Since not all lexical evidence will point towards a single classification, the NeighborNet visualizations display the conflicting evidence ('conflicting phylogenetic signal') in the diagram through reticulations in the network. These reticulations help to visualize the 'tree-likeness' of the dataset and can result from gaps in the data and undetected borrowings, either between related or unrelated languages. This degree of conflicting signal can be quantified using a number of statistics, such as the δ -score (Holland *et al.*, 2002).

Unrooted tree diagrams were computed using the neighbor-joining algorithm (Saitou; Nei, 1987). Confidence estimates for every node were calculated on the unrooted tree via bootstrapping with 10,000 runs (i.e., 10,000 resamplings with replacement, yielding 10,000 trees; the confidence of every node in the optimal tree is the percentage of resampled trees where the node in question is present), as described in Kessler (2001). The unrooted trees were rooted via midpoint rooting since no clear outgroup could be identified.

Since the rate of change is not constant across meanings even in basic vocabulary – certain items are more prone to change than others – we followed McMahon, A.; McMahon, R.'s (2005, p. 105) suggestion of compiling, within the larger Swadesh list, separate sublists of items that were more, or less, stable in time. On the basis of earlier work by Lohr (1999); Starostin (2000; see also Baxter; Ramer, 1996), McMahon; McMahon (2005) set up two sublists, termed 'HiHi' and 'LoLo', with meanings that had been shown to have high reconstructibility (they had been reconstructed for at least three of the four proto-languages considered by Lohr) as well as high retentiveness (they had been replaced by other terms at most three times in Lohr's data). When compared to the Tupian data, however, these lists were clearly not suitable: many stable meanings in the 'HiHi' list, which had at most three replacements in Lohr's data, had eight or more cognate sets in Tupian, thus indicating at least seven replacements (e.g., 'two', 'long', 'night', 'star', 'stand'). It remains to be seen whether other language families would also disagree with Lohr's list of meanings for high retentiveness and reconstructibility. If Tupian turns out not to be anomalous in this respect, then Lohr's (and McMahon's) hopes of possible cross-linguistic validity for their lists should be reexamined⁹.

To further examine stability in the Tupian data set, we compiled two lexical sublists, one with the most retentive meanings (those with four or fewer cognate sets, reflecting at most three replacements)¹⁰ and one with the least retentive

⁹ We note, in passing, that McMahon; McMahon's (2005) success in applying Lohr's (1999) and Starostin's (2000) meaning lists probably stems from the fact that they were applied to Indo-European, which was one of the language families in both Lohr's and Starostin's databases, so that the meanings in question were indeed guaranteed to have high retentiveness and reconstructibility.

¹⁰ The meaning 'sun' has five cognate sets, but because of what appears to be a mistake in the original Tapirapé source: the word is elsewhere attested as meaning 'day'. Because of this, 'sun' is here included in the Tupí-HiHi list.

meanings (those with at least nine cognate sets, reflecting at least eight replacements). To assess reconstructibility, the more retentive words were further inspected: those which, on the basis of our current knowledge of the family, seemed not to be reconstructable to Proto-Tupí were eliminated. The resulting lists, termed 'Tupí-HiHi' and 'Tupí-LoLo', are given in Tables 3 and 4.

Table 3. Tupí-HiHi list: the 28 more stable Tupí items (at most 4 cognate sets).

001-I	048-HAND
002-YOU	051-BREAST
019-FISH	053-LIVER
022-LOUSE	055-EAT
023-TREE	057-SEE
025-LEAF	060-SLEEP
028-SKIN	071-SAY
032-EGG	072-SUN
035-TAIL	075-WATER
036-FEATHER	081-SMOKE
037-HAIR	085-PATH
043-TOOTH	086-MOUNTAIN
044-TONGUE	093-HOT
046-FOOT	100-NAME

Table 4. Tupí-LoLo list: the 34 less stable Tupí items (at least 9 cognate sets).

003-WE(INCL)	065-WALK
004-THIS	067-LIE
005-THAT	069-STAND
009-ALL	073-MOON
010-MANY	074-STAR
011-ONE	078-SAND
012-TWO	080-CLOUD
013-BIG	083-ASH
014-LONG	084-BURN(INTR)
015-SMALL	088-GREEN
016-WOMAN	089-YELLOW
017-MAN	091-BLACK
018-PERSON	092-NIGHT
038-HEAD	094 COLD
049-BELLY	095-FULL
052-HEART/GUTS	096-GOOD
063-SWIM	099-DRY



A comparison with McMahon; McMahon's (2005) HiHi and LoLo lists reveals very little agreement: only ten out of their 30 HiHi meanings occurred also in our Tupí-HiHi list, and only two out of their 23 LoLo meanings occurred in our Tupí-LoLo list. One of the reasons for this surprising discrepancy is rather prosaic: McMahon and McMahon used Swadesh's 200-word list, while we used his 100-word list (more than half of their LoLo meanings are not in the 100-word list). More interestingly, though, some of Lohr's more retentive/reconstructable words could clearly not have the same status in Tupian: e.g., 'dog' was a new concept imported from Europe; 'four' and 'five' (often even 'three') are not lexicalized in all Tupian languages, where numeral systems are rather small¹¹; 'other' is usually a word with more meanings besides 'other'; and, some terms ('night', 'star', 'day') tend to be related to or derived from others ('dark', 'moon', 'sun', respectively), often in various ways, depending on the language, which lowers their degree of retentiveness. To avoid these difficulties, we decided to adopt the Tupí-HiHi and Tupí-LoLo meanings (Tables 3 and 4) instead of those listed by McMahon; McMahon (2005)¹². New matrices were then prepared for the Tupí-HiHi and Tupí-LoLo sublists, from which networks and cladograms with confidence estimates were produced for comparison with those resulting from the whole Swadesh list (1955)¹³.

Finally, a final list of words was compiled that consists of 90 names of animals and plants (listed in Appendix 2), where we expected to see the effects of borrowing more clearly. Due to insufficient data, the Paraguayan dialect of Guaraní was replaced by the Mbyá dialect, and Tapirapé was excluded from the set, reducing the total of language varieties taken into account to 22. The same procedure used for the Swadesh list, and the Tupí-HiHi and Tupí-LoLo sublists was again applied to the list of plants and animals, yielding more networks and trees (cladograms) for comparison.

RESULTS AND DISCUSSION

SIMILARITY (SHARED COGNATES) MATRIX

The lexical distance among each pair of languages in the sample is shown in the matrix consisting of percentages of pairwise shared cognates (Table 5), on the basis of which the first classification of the Tupian family, with data from all non-Tupí-Guaranian languages of the other nine branches of the family (including previously unavailable data on Akuntsú, Kuruáya, Puruborá and Salamã), can be proposed.

A clear pattern emerges for the two larger branches found in the State of Rondônia, Mondé and Tuparí. The percentage of shared cognates in the Mondé branch confirms Moore's (2005) analysis of Gavião, Zoró and Aruá¹⁴

¹¹ Some Tupian languages have not a simple word but a complex expression for these numbers, sometimes even more than one expression in synchronic competition.

¹² McMahon, A.; McMahon, R.'s HiHi list (2005, p. 109, Table 4.2) with 30 meanings: four, name, three, two, foot, give, long, salt, sun, other, sleep, to come, day, to eat, not, thin, five, mother, ear, I, new, night, one, to spit, star, to stand, though, tongue, tooth, wind. McMahon, A.; McMahon, R.'s LoLo list (2005, p. 109, Table 4.2) with 23 meanings: grass, mouth, stone, heavy, year, bird, near, smooth, wing, man, neck, tail, to walk, back, to flow, left (hand), to pull, to push, river, rope, straight, to think, to throw.

¹³ Holman *et al.*, (2008) have also published a list of meanings ranked by stability, based on a large (800+) sample of languages. There is a high degree of correlation between Holman's list and ours (preliminary results based on a suggestion by one of the referees to this paper show a Spearman rank correlation of -0.50 with $p < 0.0000001$, without any radical outliers visible on a plot of Holman ranks vs. meanings), which means that our choice to use a Tupí-internal stability ranking is not expected to produce significantly different results from an analysis based on Holman's rankings. We hope to investigate, in future studies, the idea of a universal stability ranking and to examine possible family-specific ranking deviations for particular meanings.

¹⁴ Cinta-Larga, another dialect, was not included in the sample.

Table 5. Pairwise percentage similarity matrix of Tupian languages.

	P. Guaraní	Urubú-Ka'apór	Tapirapé	Parintintín	Awetí	Mawé	Mundurukú	Kuruáya	Makuráp	Wayoró	Tuparí	Akuntsú	Mekéns	Xipáya	Jurúna	Káro	Puruborá	Arúá	Gaviao	Zoró	Salamáy	Suruí	Karitiána
P. GUARANÍ	100	076	076	076	055	049	034	036	031	028	025	037	032	034	032	027	028	027	027	027	030	022	029
URUBÚ-KA'APÓR	076	100	076	071	055	047	037	040	030	030	026	039	033	035	031	029	026	030	030	029	034	024	031
TAPIRAPÉ	076	076	100	076	056	050	037	039	032	032	029	041	037	036	034	031	031	031	030	029	034	022	028
PARINTINTN	076	071	076	100	062	053	037	041	032	030	029	039	033	036	033	029	028	031	031	031	035	025	029
AWETÍ	055	055	056	062	100	048	033	036	029	030	030	041	033	030	027	030	028	030	030	030	034	025	028
MAWÉ	049	047	050	053	048	100	034	036	032	035	034	047	037	036	032	030	034	031	034	034	035	029	029
MUNDURUKÚ	034	037	037	037	033	034	100	073	032	032	030	039	038	036	031	026	026	032	031	031	034	027	028
KURUÁYA	036	040	039	041	036	036	073	100	036	035	032	041	038	036	031	029	029	035	035	035	037	031	032
MAKURÁP	031	030	032	032	029	032	032	036	100	050	045	052	049	030	026	028	030	031	028	029	031	024	028
WAYORÓ	028	030	032	030	030	035	032	035	050	100	067	072	062	028	025	032	030	033	031	032	033	026	030
TUPARÍ	025	026	029	029	030	034	030	032	045	067	100	069	057	027	025	030	030	033	032	032	033	027	029
AKUNTSÚ	037	039	041	039	041	047	039	041	052	072	069	100	082	037	035	039	039	036	035	036	036	029	035
MEKÉNS	032	033	037	033	033	037	038	038	049	062	057	082	100	033	029	032	034	031	031	030	030	024	027
XIPÁYA	034	035	036	036	030	036	036	036	030	028	027	037	033	100	078	031	028	031	030	029	031	026	028
JURÚNA	032	031	034	033	027	032	031	031	026	025	025	035	029	078	100	029	025	026	027	027	027	022	026
KÁRO	027	029	031	029	030	030	026	029	028	032	030	039	032	031	029	100	037	031	031	032	033	025	030
PURUBORÁ	028	026	031	028	028	034	026	029	030	030	030	039	034	028	025	037	100	034	034	035	034	028	028
ARUÁ	027	030	031	031	030	031	032	035	031	033	033	036	031	031	026	031	034	100	088	085	083	070	029
GAVIAO	027	030	030	031	030	034	031	035	028	031	032	035	031	030	027	031	034	088	100	092	086	074	029
ZORÓ	027	029	029	031	030	034	031	035	029	032	032	036	030	029	027	032	035	085	092	100	088	075	029
SALAMÁY	030	034	034	035	034	035	034	037	031	033	033	036	030	031	027	033	034	083	086	088	100	074	030
SURUÍ	022	024	022	025	025	029	027	031	024	026	027	029	024	026	022	025	028	070	074	075	074	100	025
KARITIÁNA	029	031	028	029	028	029	028	032	028	030	029	035	027	028	026	030	028	029	029	029	030	025	100

as dialects of one language. The proximity of Salamáy to these three languages may be an effect of the large gap – 16 missing items—in Salamáy data, as well as the ongoing obsolescence of this language. In this data set, Suruí (70%-75%) stands out as the most divergent language in the Mondé branch¹⁵. In the Tuparí case, Mekéns and Akuntsú show similarly high percentages (82% shared cognates), which is not surprising if one takes into account that they are mutually intelligible and show very close phonological and morphological resemblances. In a brief paper on the classification of Akuntsú, Gabas Júnior (2005) left its status as a distinct language unresolved; the data set analyzed

¹⁵ Another classification proposal by Anonby (2012) is not supported by the results from analysis put forth here.



here suggests that Akuntsú and Mekéns are co-dialects of a single language. The other three languages are more lexically distant (45% to 72% shared cognates), Makuráp being the most divergent of the five.

Outside of Rondônia, the languages of the Tupí-Guaraní, Mundurukú and Jurúna branches all show percentages of more than 70% of shared cognates with the other languages of their respective branches. The highest rate, 78%, is found between the two Jurúna languages, Jurúna and Xipáya. Mundurukú and Kuruáya share 73% of their cognates, and the four Tupí-Guaraní languages in the sample show a rate of 71-76%¹⁶.

The closer relation between Tupí-Guaraní, Awetí, and Mawé is also very clear in Table 5, giving further support to the hypothesis of a Mawetí-Guaraní branch (Corrêa da Silva, 2007, 2010; Drude, 2006; Rodrigues, 1984/85; Rodrigues; Dietrich, 1997; Walker *et al.*, 2012). A stepwise discontinuity can be observed in Table 5: starting with shared cognate percentages of 71%-76% among Tupí-Guaraní languages, there is a drop to 55%-62% with Awetí, a further drop to 47%-53% with Mawé, and a further drop to 22%-41% when one moves to the other Tupian branches¹⁷. Such clear-cut borders support the idea of a Mawetí-Guaraní branch, with the structure seen in Figure 1 above.

As a general effect, the results in Table 5 show the languages with few speakers (Akuntsú, Kuruáya, Puruborá, Salamã, Xipáya) with systematically higher cognacy percentage than their closest related languages. Due to the situation of obsolescence of these languages, their respective word lists are less complete. The tendency in such cases is for semi-speakers and 'rememberers' to recall names of animals and other concrete items. It is highly probable that the forgotten meanings, for instance, 'today', 'there', 'four', involve items that are less likely to be cognates, leaving the more probable cognates in the recorded word list. Note that the semi-speakers usually know at least one other local Tupian language, which would make it more likely for cognate words not to be forgotten.

The network shows a low degree of reticulation, with a mean δ -score of 0.233 (s.d. \pm 0.04). This suggests that there is a low degree of undetected borrowings in the dataset and that there are clearly identifiable branches within the network. In comparison, Gray *et al.* (2010) calculate the same statistic for other major language families of the world and find that Indo-European, which they consider to be highly tree-like and are using confident data based on centuries of etymological work, shows a δ -score of 0.22, while the Polynesian languages, which they consider highly reticulate, shows a δ -score of 0.41. In the Tupian dataset, the languages with δ -scores higher than the first standard derivation, which are the languages that contributed the most conflicting evidence to the tree-likeness of the dataset, are Kuruáya, Puruborá, Káro and Karitiána, with δ -scores of 0.288, 0.280, 0.311, and 0.313, respectively.

RELATEDNESS NETWORKS AND TREES

100-word Swadesh list

The shared cognate (similarity) matrix in Table 5 corresponds to the network in Figure 2, where the lexical distance between languages and the internal structure of each branch can be visualized.

¹⁶ The Tupí-Guaranian languages in the sample were taken from different subgroups, both in Mello's (2000) and in Rodrigues; Cabral's (2002) classifications, and are almost as far away from each other as is possible to be within this branch. It would be interesting to see how many languages within each Tupí-Guaraní sub-branch would turn out to be better described as (co-)dialects if their percentage of shared cognates, their overall phonological and grammatical similarity, and their level of mutual intelligibility were compared.

¹⁷ One outstanding case is the 47% value found for Mawé and Akuntsú (Tuparí branch); but it is probably due, at least in part, to the gaps in the Akuntsú data (see Table 1).

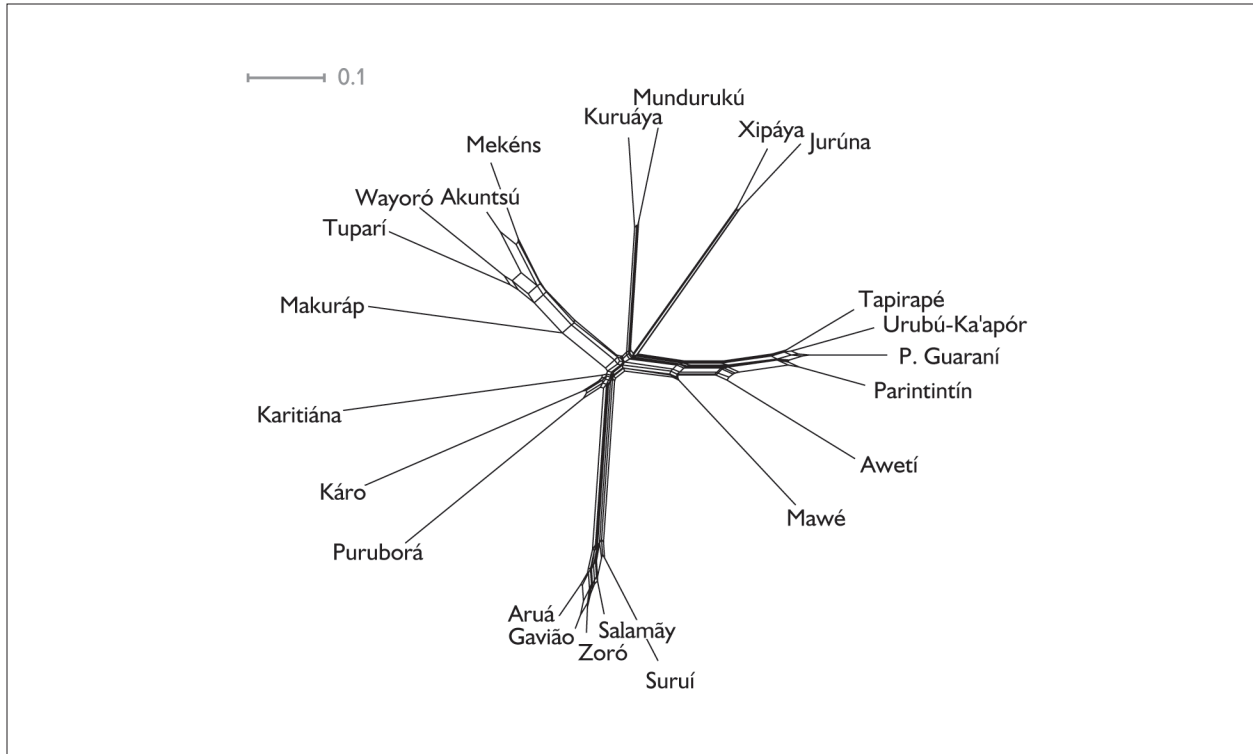


Figure 2. Network representation of lexical distance (NeighborNet algorithm) based on the 100-word Swadesh list.

The distance and ramifications of the branches, as shown in Figure 2, confirm the classifications based on the traditional comparative method (Corrêa da Silva, 2010; Fargetti; Rodrigues, 2008; Galucio; Nogueira, 2012; Meira; Drude, this volume; Moore; Galucio, 1994; Moore, 2005; Picanço, 2005; Rodrigues, 1984/85).

The above results clearly support the higher-order branches in Figure 1. In one case, the support is barely significant: the Ramaráma-Puruborá branch (Káro and Puruborá languages), barely visible in Figure 2. The cladogram in Figure 3 evaluates its confidence as 71.9 (i.e., a Káro-Puruborá node occurred in 71.9% of the 10,000 resampling trees generated via bootstrapping)¹⁸; in comparison, the confidence of all other higher-order branches (Mondé, Tuparí, Mundurukú, Jurúna, Mawetí-Guaraní) is above 99%. Káro-Puruborá, or Ramaráma-Puruborá, proposed by Galucio; Gabas Júnior (2002), does find some support here, albeit with a relatively low confidence level. Also note that Káro-Puruborá is placed as the closest relative to Mondé, albeit with very low confidence level (40.6%), which coincides with a proposal put forth in Rodrigues (2005) for a subgrouping containing these three branches on the basis of the merger of *a and *o in these languages.

The Mawetí-Guaraní branch (Corrêa da Silva, 2010; Drude, 2006; Meira; Drude, this volume; Rodrigues, 1984/85; Rodrigues; Dietrich, 1997) is clearly identified in Figure 3, with an internal structure as was shown in Figure 1: Proto-Tupí-Guaraní (99.7% confidence) forms a higher-order branch with Awetí ("Awetí-Guaraní"; 99.0%), which then forms another higher-order branch with Mawé ("Mawetí-Guaraní"; 99.6%).

¹⁸ Figure 3 can be usefully compared to the tree in Figure 1 in Walker *et al.* (2012). That tree is based on fewer (40) items, less reliable data and a different distance-based method based on edit distance between corresponding lexical items. It differs in higher groupings and also in the internal classification of the branches.

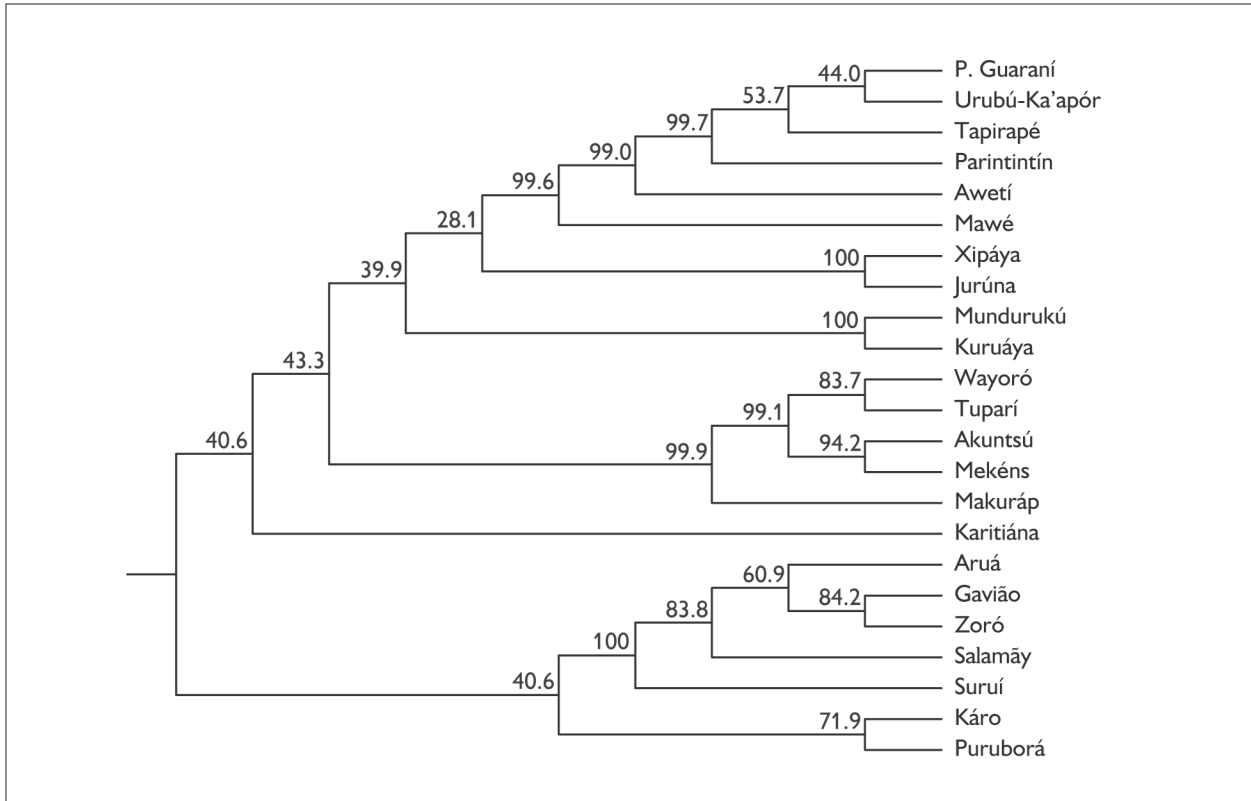


Figure 3. Midpoint-rooted neighbor-joining cladogram with confidence rates (calculated via bootstrapping) for the same data represented in the network in Figure 2¹⁹.

Figures 2 and 3 also confirm the proposed internal classification of the Mondé (Moore, 2005) and Tuparí (Galucio; Nogueira, 2012) branches, originally based on phonological and morphological innovations and on mutual intelligibility. Within Mondé, Gavião and Zoró, closely related dialects, clearly form a subgroup (confidence 84.2%), to which Aruá and Salamāy are further added (confidence 83.8%). A subgroup including Aruá and Gavião-Zoró appears with confidence 60.9%, which, though suggestive, is still low and ultimately inconclusive²⁰; Salamāy, Aruá and Gavião-Zoró are probably best seen as co-dialects at the same level. Suruí is the last to join the Mondé branch, and probably the only variety different enough to be a separate language rather than a co-dialect of Gavião-Zoró-Aruá. The results are also different in some respects from the classification in Walker *et al.* (2012), generated by applying the ASJP method based on normalized edit distances to a 40-word vocabulary lists. They place Salamāy, called Mondé in their paper, as the most divergent language inside the Mondé branch, probably due to lack of more accurate data in this specific case. In the same vein, our results do not support their classification of Ramaráma as closer to Tuparí than to the Mondé branch.

¹⁹ This cladogram refers not to the network in Figure 2, but to the best equivalent tree to that network, calculated with the neighbor-joining algorithm (Saitou and Nei, 1987) applied to the same data set.

²⁰ Since bootstrapping involves random resampling, the confidence values usually change when evaluated again. Low confidence levels change more, since the status of the corresponding branch or subnetwork as contributing to the best solution is not robust and can be significantly affected by small changes, like the selection of a different algorithm or even of a different set of parameters for the same algorithm, or a few changes in the data.

In the Tuparí branch, the closer relation between Akuntsú and Mekéns is evident in Figures 2 and 3 (94.2% confidence), as is also the slightly less close relation between Tuparí and Wayoró (83.7% confidence). Mekéns-Akuntsú and Tuparí-Wayoró then join (99.1% confidence); Makuráp is the last to join, forming the Tuparí branch (99.9% confidence).

Attempts at producing higher-order branches by joining some of the aforementioned branches must be regarded as not supported by Figures 2 and 3. Even though the reticulation would tend to suggest connections, and the tree algorithm did select a higher-order branching hierarchy, the confidence values are so low (in the 28.1%-43.3% range) that these solutions must be unstable, dependent on small changes in cognacy judgment or even on the selection of different algorithms or parameter settings.

Tupí-HiHi and Tupí-LoLo sublists

Turning now to the Tupí-HiHi and Tupí-LoLo lists (see Tables 3 and 4 above), we obtain different networks, as shown below in Figures 4 and 5. Note that the main traditional branches (Mundurukú, Jurúna, Mondé, Tuparí, Mawetí-Guaraní) remain quite obvious in both figures; but the new Káro-Puruborá (Ramaráma-Puruborá) branch, which already had low confidence in Figure 3, is barely visible in Figure 4 and disappears in Figure 5²¹. An interesting difference between these figures concerns the positions of Karitiána and of Jurúna-Xipáya. In Figure 4 (Tupí-HiHi), Karitiána appears between Mawetí-Guaraní and Mondé, while in Figure 5 (Tupí-LoLo) it is placed between Mawetí-Guaraní and Mundurukú. In Figure 2 (the whole Swadesh list), Karitiána appears between Tuparí and Káro. McMahon, A.; McMahon, R. (2005)

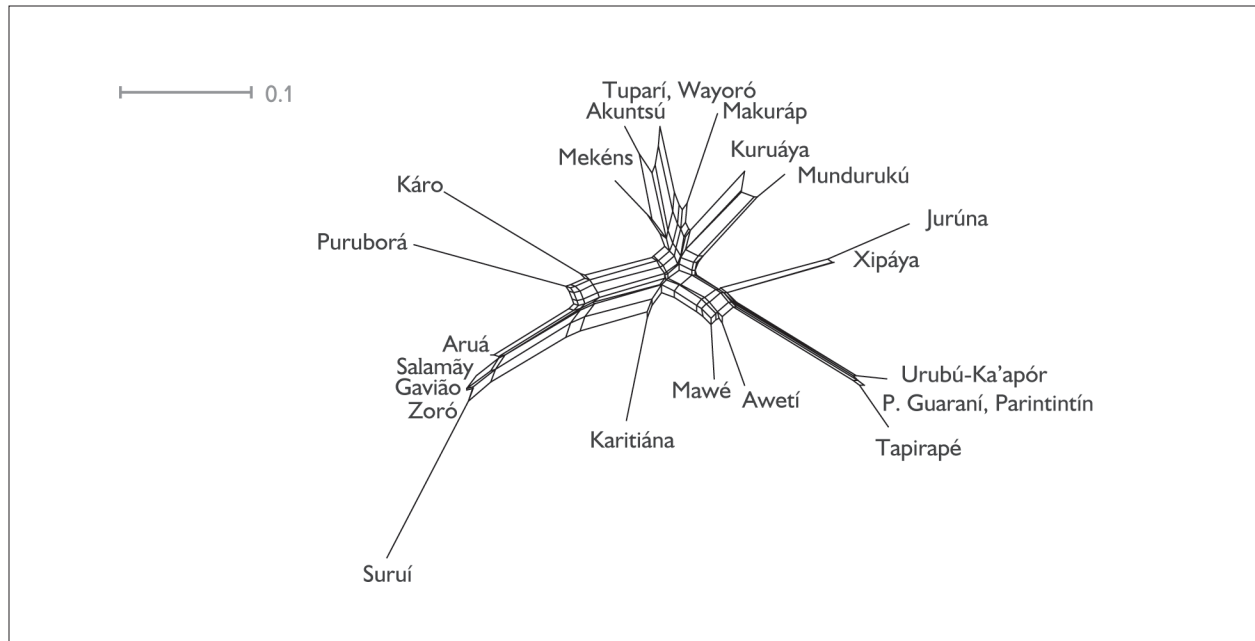


Figure 4. Network representation (NeighborNet algorithm) based on Tupí-HiHi (more stable) words.

²¹ The network representation of lexical distance in the Tupí-HiHi list is only marginally more reticulate than that of the Tupí-LoLo list, i.e. is less tree-like, with δ -scores of 0.289 (s.d. \pm 0.042) and 0.268 (s.d. \pm 0.040), respectively. The statistical outliers in the Tupí-HiHi list are Akuntsú, Mekéns and Karitiána (δ = 0.352, 0.346, 0.373, respectively), while the outliers for the Tupí-LoLo list are Karitiána, Káro and Puruborá (δ = 0.324, 0.345, 0.361, respectively).

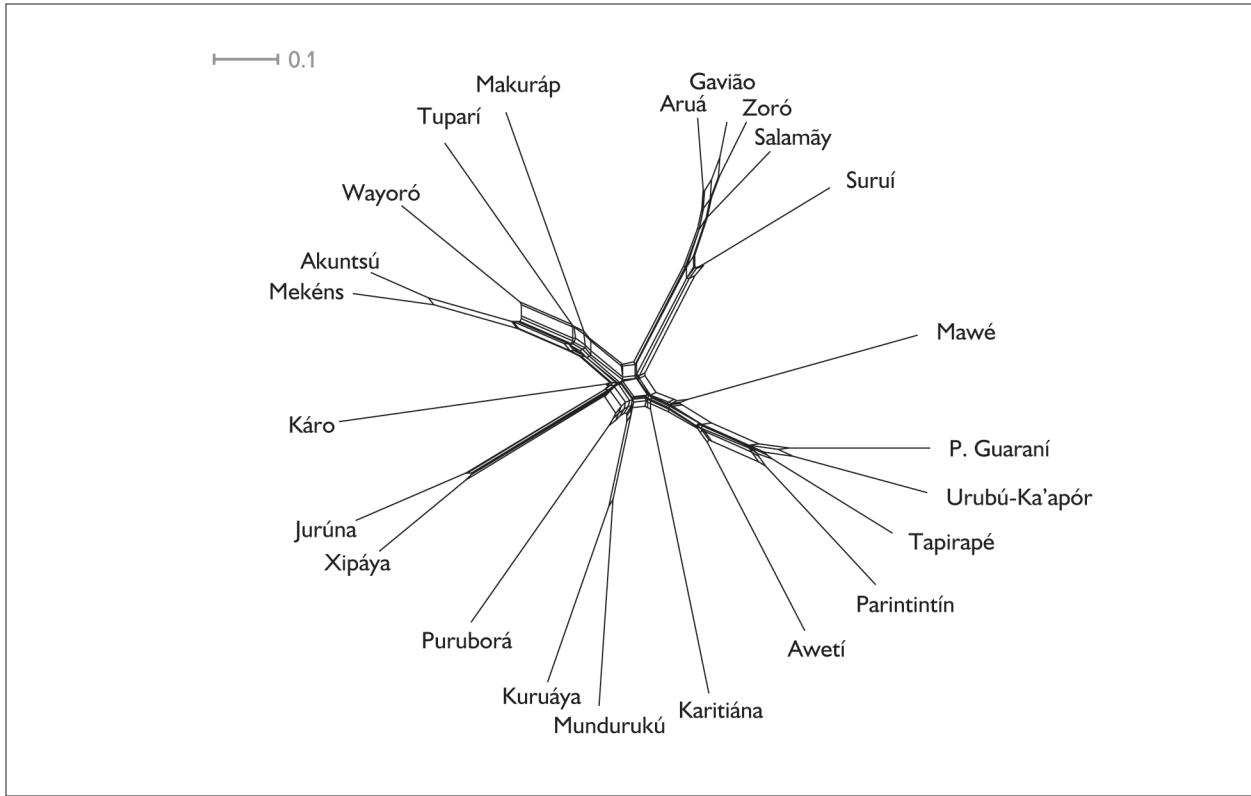


Figure 5. Network representation (NeighborNet algorithm) based on Tupí-LoLo (less stable) words

suggest that such shifts in relative position are good indicators of contact-induced borrowings. The differences are small and need to be examined in more detail, but the results would tentatively suggest that Karitiána may have borrowed from other branches so as to become more similar to the other Rondônian languages (i.e., moving away from Mawetí-Guaraní). The Karitiána have borrowed multiple cultural traits, probably from long term contact with a group that did not belong to the Tupian family, such as a skull deformation apparatus, a horizontal mortar made of a carved tree trunk used with a rectangular stone for grinding corn and the tradition of eating corn porridge.

For Jurúna-Xipáya, the situation is the opposite of that of Karitiána: in Figure 4 (Tupí-HiHi), Jurúna-Xipáya appears closer to Mawetí-Guaraní (more so than in Figure 2), while in Figure 5 (Tupí-LoLo) it flips to the other side, ending up between Káro and Puruborá. This suggests (again tentatively) that Jurúna-Xipáya was originally closer to Mawetí-Guaraní and may have borrowed from other branches in past contacts. A possible connection between Jurúna-Xipáya and Mawetí-Guaraní (both members of a putative Eastern Tupian branch) has already been suggested (Rodrigues; Cabral, 2012).

The basic structure of the subclassification of Mondé (Gavião-Zoró-Aruá-Salamāy vs. Suruí) is maintained, with Salamāy looking a little more distant from Gavião-Zoró-Aruá in Figure 5 (Tupí-LoLo list) and a little closer in Figure 4 (Tupí-HiHi). In Tuparí, on the other hand, there are more important differences: though the more distant relation of Makuráp to the rest of the branch remains visible, the close relationship between Akuntsú and Mekéns is clearer in Figure 5 (Tupí-LoLo) than in Figure 4 (Tupí-HiHi), where it would seem Akuntsú is at least as close (maybe even closer) to Wayoró-Tuparí as it is to Mekéns. This would tentatively suggest borrowing contacts between Akuntsú and Mekéns.

90-word plant and animal list

Turning now to the list of plant and animal names (see Appendix 2), which in principle should contain words that are less time-stable and more prone to borrowing and other areal influences, we find the results shown in the diagrams in Figures 6 and 7 below²².

The first observation concerns the large Mawetí-Guaraní branch. While the branch as a whole and the Tupí-Guaraní subbranch remain just as robust as before (for Mawetí-Guaraní, 99.6% confidence in Figure 3, now 99.8% in Figure 7; for Tupí-Guaraní, 99.7% and 99.4% respectively), the Awetí-Guaraní subbranch is much less clearly visible in Figure 6 than it is in Figures 2, 4, and 5; the corresponding confidence drops from 99.0% in Figure 3 (Swadesh list) to 65.7% in Figure 7 (plants and animals). In other words, Mawé appears to be much closer to Awetí-Guaraní, to the point that the latter group does not appear clearly attested on the basis of the list of animals and plants, as it does on the basis of the Swadesh list. This suggests that Mawé may have borrowed words from other Awetí-Guaraní languages, which is indeed confirmed by historical records: Mawé was for a long time in contact with Nheengatu, a *lingua franca* descended from the Tupí-Guaraní language Tupinamba, and has many borrowings from it (see Corrêa da Silva, 2007, 2010).

Turning to the Ramaráma-Puruborá (Káro-Puruborá) subbranch, we see an increase from the barely significant confidence based on Swadesh list data (71.9% in Figure 3) to a more comfortable level (84.6%) with plant and animal names. Furthermore, in the Tuparí branch, we see that Wayoró, which formed a subbranch with the Tuparí language in Figure 3 (83.7% confidence), now forms a subbranch with Makuráp (58.7%). Such 'jumping around' again exemplifies what McMahon; McMahon (2005) consider an indicator of possible undetected borrowings in the dataset. It is also possible

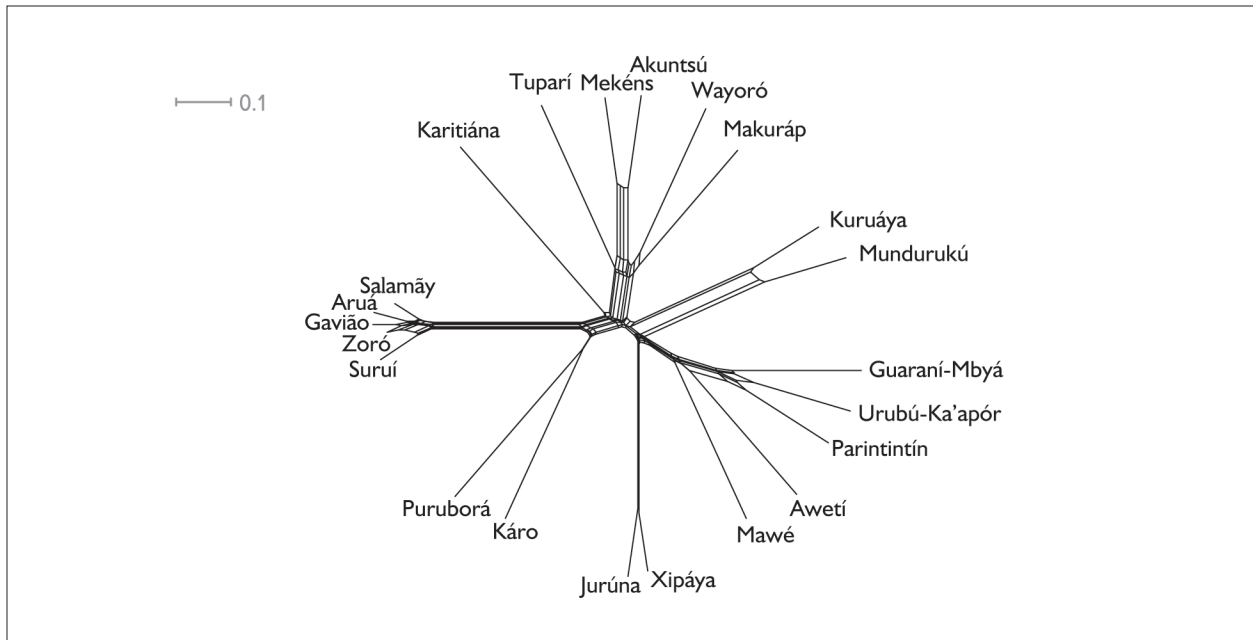


Figure 6. Network representation (NeighborNet algorithm) based on the 90-item list of plants and animals

²² Note that, as said before, Tapirapé was eliminated and Paraguayan Guaraní was replaced with Mbyá Guaraní, due to insufficient information in the available sources.

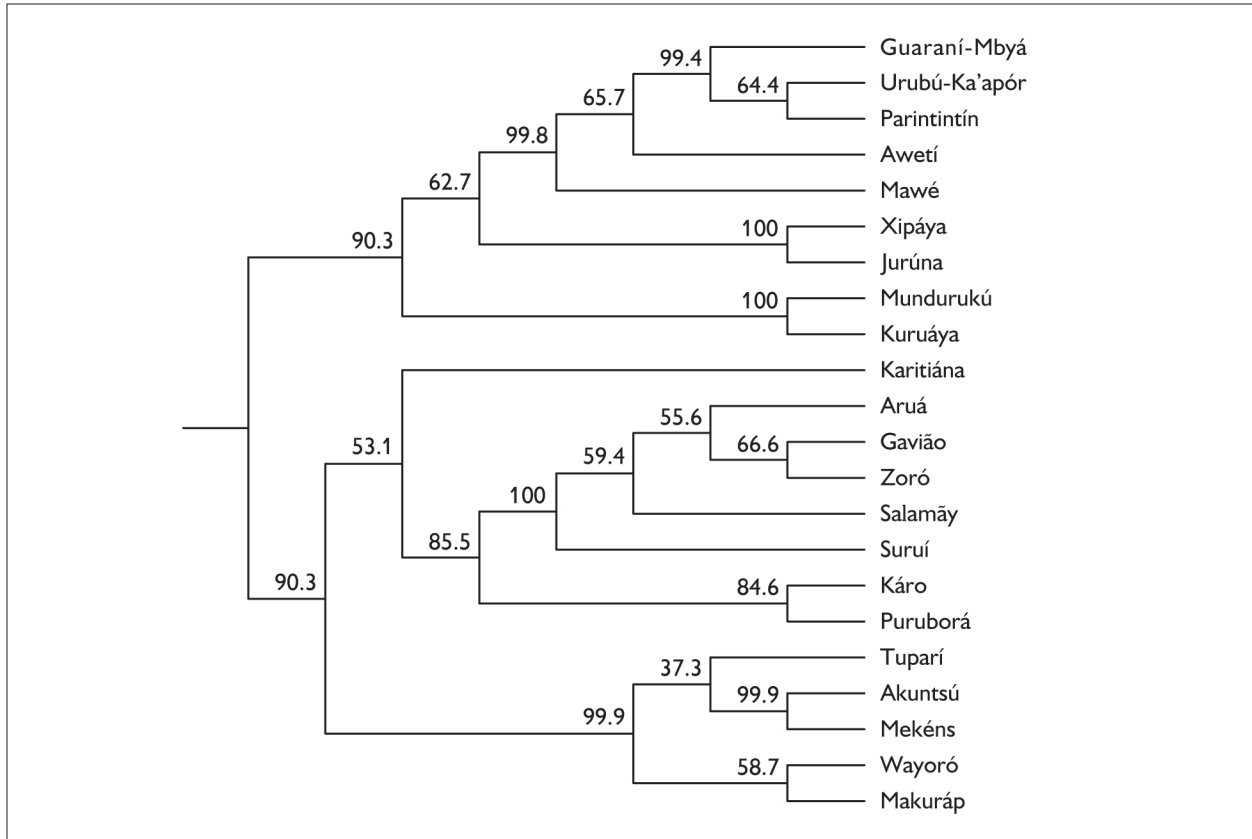


Figure 7. Midpoint-rooted neighbor-joining cladogram with confidence rates (calculated via bootstrapping) for the 90-item list of plants and animals.

that the results reflect the current situation of advanced linguistic obsolescence for Puruborá and Wayoró. Puruborá is only spoken by a couple of 'rememberers', while Wayoró is spoken by a few individuals who do not normally use it and have not done so for a long time. At least in the Wayoró case, speakers are in close contact with Makuráp, from which they may have made *impromptu* borrowings.

Another interesting fact is the presence of a higher subgrouping comprising all Rondônian branches when considering the list of plant and animal names. This subgrouping is clearly visible in Figure 6 and shows 90.3% confidence in Figure 7. This suggests a higher level of borrowing, perhaps even areal effects, between Rondônian languages, at least in the domain of plants and animals. In his study of isolates in Rondônia, Voort (2005) noted considerable diffusion of animal names.

SUMMARY

The lexicostatistical classification derived through the analysis of a complete 100-item Swadesh list for all Tupian languages of the nine branches outside Tupí-Guaraní provides a considerable body of evidence that confirms the classification proposals based on the traditional Comparative Method and other methods of historical linguistics. The results discussed here support the proposed higher Mawetí-Guaraní branch, and while not conclusive, the results also provide marginal support for the putative Ramaráma-Puruborá (Káro-Puruborá) branch.

The internal classification of the two most largely diversified branches after Tupí-Guaraní, Mondé and Tuparí, is a great contribution to the discussion of the internal structure of the Tupian family. For instance, one interesting observation regarding the internal classification of the Tuparí branch is that while Makuráp appears as the more lexically divergent language, it is also the language more deeply involved with situations of borrowing, both with Tupian and non-Tupian languages of the Rondônia region.

The hypothesis of a large grouping uniting all of the non-Tupí-Guaraní Tupian languages spoken in Rondônia ('Western Tupian') as a viable branch in the classification of the family is not supported here. Our analysis of plant and animal terms, which are most likely to be borrowed, suggests that apparent similarities between the 'Western' languages may be a result of undetected borrowings either among the Rondônian Tupian languages or between them and their non-related neighbors (cf. Crevels; Voort, 2008). In addition, our analysis of lexical distance of basic vocabulary has revealed that there is a low degree of reticulation in the current dataset. This suggests that the Tupian expansion was essentially tree-like, and thus probably marked by multiple periods of distinct migrations (or by political separation of peoples when these were in the same region), producing the different branches. These migrations were then followed by periods of relative demographic separation, resulting in the diversification of the respective branches and possible instances of social interaction with neighboring ethnolinguistic groups. Such a hypothesis can be further developed through collaboration with researchers in related disciplines concerned with human prehistory.

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APPENDIX 1: SWADESH'S 100-WORD LIST

The meaning, with its number in the list, is given in boldface capitals. The specific words, retranscribed from their original sources with IPA symbols (note that acute and grave accents mark tone, not stress, and that long vowels are represented by sequences of identical vowels: *aa*, *oo*, etc.; a dot, used only when necessary, marks a syllable boundary), are presented under the meaning, in italics, preceded by a two-letter abbreviation indicating the source language. Initial hyphens (indicating that the word takes a prefix) are copied from the original sources. Words assumed to be cognate (fully or partially) are listed sequentially, separated by commas, forming a cognate set; the end of a cognate set is indicated by two vertical strokes (||). If for a given meaning a language has variants or synonyms, they are indicated after the language abbreviation, separated by commas; if a word has conditioned alternants, these are separated by a tilde (~). A segment enclosed in parenthesis is not always pronounced. For each meaning, cognate sets are presented in order of decreasing size. Missing words are marked by question marks after the language abbreviation, at the end, after all cognate sets.

Given the incipient stage of knowledge about Proto-Tupí and its historical development, our cognacy judgments in this paper are preliminary, based on our experience with the languages and with our current hypotheses about their sound changes; some of them will probably change in the future. Methodologically, we decided to err on the side of inclusiveness: if only part of a word is cognate (p.ex., Portuguese *nós* and the first syllable of Spanish *nosotros*, both meaning 'we'), we still counted it as a full cognate.

Language abbreviations: Ak = Akuntsú, Ar = Aruá, Aw = Awetí, Gv = Gavião, Ju = Jurúna, Ka = Káro, Kt = Karitiána, Ku = Kuruáya, Ma = Makuráp, Me = Mekéns, Mu = Mundurukú, Mw = Mawé, Pg = Paraguayan Guaraní, Pt = Parintintín, Pu = Puruborá, Sa = Salamã, Su = Suruí, Ta = Tapirapé, Tu = Tuparí, Uk = Urubú-Ka'apor, Wa = Wayoró, Xi = Xipáya, Zo = Zoró

001-I

Mu *õn*, Ku *õn*, Wa *õn*, Ma *õn*, Tu *õn*, Ak *õn*, Me *õn*, Xi *una*, Ju *una*, Ka *ʔõn*, Pu *ʔõn*, Ar *õõt*, Gv *õõt*, Zo *õõt*, Sa *õõt*, Su *ó.ën*, Kt *ñn* || Pg *je*, Uk *ihě*, Ta *ie*, Pt *ji(hi)*, Aw *ito*, Mw *ujto* ||

002-YOU

Aw *ʔen*, Mw *en*, Mu *én*, Ku *ën*, Wa *ʔën*, Ma *ën*, Tu *ën*, Ak *en*, Me *ët*, Xi *ena*, Ju *ena*, Ka *ʔën*, Pu *ʔën*, Ar *ëët*, Gv *ëët*, Zo *ëët*, Sa *ëët*, Su *é.ën*, Kt *ãn* || Pg *nde*, Uk *nde*, Ta *ane*, Pt *nde(he)* ||

003-WE (INCLUSIVE)

Pg *nande*, Uk *jande*, Ta *tane*, Pt *nande* || Ar *panóój*, Gv *panóój*, Zo *panóój*, Su *pá.ën* || Tu *kitwat*, Ak *kitfe*, Me *kise-jat*, Ju *sí* || Mu *wəjdʒá*, Ku *weidisip* || Ka *iʔtá*, Kt *ijfá* || Aw *kajá* || Mw *aito* || Wa *ʔire* || Ma *kitějã* || Xi *uzudí* || Pu *je-βəra* || (Sa ?)

004-THIS

Xi *ani*, Ju *ani*, Ar *ãá*, Gv *ãá*, Zo *ãá*, Su *ãá* || Uk *komeʔě*, Mw *mějě*, Wa *ěě*, Ak *eme*, Ka *mět* || Ta *hã*, Mu *i-dʒa*, Tu *ha-* || Pg *ko(va)* || Pt *agwa* || Aw *akoj* || Ma *ʔērō* || Me *op* || Kt *kahit* || (Ku ? Pu ? Sa ?)



005-THAT

Ka *jet je*, Ar *jè*, Gv *jè*, Zo *ji*, Su *je* || Uk *pemeʔě*, Tā *epe* || Ma *měrō*, Ak *jěrom* || Xi *ami*, Ju *ami* || Pg *amova* || Pt *ɲwi* || Aw *jatā* || Mw *meiko* || Mu *i-bó* || Me *eke* || Kt *kahit* ||
(Ku ? Wa ? Tū ? Pu ? Sa ?)

006-WHAT

Ar *mé*, Gv *mé*, Zo *mé*, Sa *mé* || Pg *mbaʔe*, Uk *maʔe*, Tā *mahe*, Kt *mōrā* || Pt *gara*, Aw *karika*, Mw *kat*, Tū *kat* || Mu *aɟó ~ áɟo*, Ku *ado*, Wa *arop*, Me *arop* || Xi *apa*, Ju *apá* || Ma *alikʔop* || Su *nǎǎn* || Ka *kit* ||
(Ak ? Pu ?)

007-WHO

Pg *mava*, Uk *awa*, Tā *āwā*, Pt *maʔɲa*, Mu *abá ~ ábə*, Ku *abi*, Xi *ma*, Ju *má* || Ar *mé*, Gv *mé*, Zo *mé*, Ka *mōrā* || Wa *apokwaat*, Tū *apo* || Ma *alikop*, Me *arobēp* || Aw *kojika* || Mw *uwēi* || Ka *nān* ||
(Ak ? Pu ? Sa ? Su ?)

008-NOT

Wa *-ōm*, Tū *-ʔōm*, Ak *nom*, Me *nop*, Pu *nō*, Ar *óóp*, Gv *óóp*, Zo *óóp* || Pg *nd(V)- -i*, Tā *n(ā)- -i*, Pt *n(d)- -i*, Mw *í(i)t ʔi* || Xi *-aũ*, *-ma*, Ju *-aũ*, *-ma* || Uk *im* || Aw *an* || Mu *ɲá* || Ma *piit* || Ka *iʔke* || Sa *aʔō* || Kt *padnī* ||
(Ku ? Su ?)

009-ALL

Zo *sopop*, Sa *sópój* ||
Pg *opa* || Uk *johu* || Pt *pavēi* || Aw *namāpite* || Mw *torania* || Mu *sóat* || Ku *póam* || Wa *ndege* || Ma *βiibmō* || Tū *erote* || Me *paeseet* || Xi *kiwi* || Ju *bitéhu* || Gv *kíríjǎǎ* || Ar *βérep* || Su *bagatér* || Ka *iakatīim* ||
(Tp ? Ak ? Kt ? Pu ?)

010-MANY

Pg *h-eta*, Uk *h-eta* || Gv *góló-á*, Zo *góló-á* || Xi *tubi*, Ju *itʔibi* || Tā *hiɲa* || Pt *-eʔi* || Aw *ʔitoto* || Mw *kahato* || Mu *ádé* || Ku *tʔin ~ dʔin* || Wa *pite* || Ma *kalejō* || Tū *karato* || Me *-obaat* || Ka *paʔpik-tem* || Ar *kakóó* || Sa *déét* || Su *fáme.ó* || Kt *pitat* ||
(Ak ? Pu ?)

011-ONE

Pu *mōm*, Ar *móót*, Gv *móòj*, Zo *móòj*, Sa *móót*, Su *mááj* || Wa *kiet*, Ma *erekit*, Tū *kie*, Ak *kite*, Me *kitse*, *kie-ka* || Pg *peteř*, Uk *peteř* || Xi *memehinaku*, Ju *meméhinaku* || Tā *ǎtepe* || Pt *ojipéji* || Aw *momozotsu* || Mw *wētup* || Mu *pǎɲ* || Ku *dá* || Ka *kotī-rem* || Kt *mīhīnt* ||

012-TWO

Pg *mokōj*, Uk *mokōj*, Tā *mokōj*, Pt *mokōj*, Aw *mokōj* || Mw *tiipi*, Wa *ndirit*, Tū *hiri*, Ak *tiri*, Me *tiri.ēp* ||
Ar *bosa*, Zo *bósaat* || Mu *fépfép* || Ku *porakā* || Ma *ereʔa* || Xi *bida* || Ju *jauda* || Ka *cagáro kōm-nem* ||
Pu *βewap* || Gv *paá-ja-kāp* || Su *míjakábit* || Kt *sipōmp* ||
(Sa ?)

013-BIG

Pg *gwasu*, Aw *-watu*, Mw *-wato*, Ma *tfato*, Ak *atfo*, Me *atso*, Xi *urahu*, Ju *uráhu*, Ka *cú*, Pu *hu*, Kt *tii* || Ar *póój*,
Gv *-póòj*, Zo *póòj*, Sa *póój*, Su *póój* || Uk *tihá* || Tā *oweteo* || Pt *-ehāi* || Mu *boj* || Ku *adore(?)* || Wa *akara* || Tū *eraat* ||

014-LONG

Pg *puku*, Uk *puku*, Tā *poko*, Pt *puku*, Aw *puku* || Ar *atít*, Gv *-atòd*, Zo *-atòd*, Sa *-ato*, *-atóó*, Su *-ató-a* ||
Mu *pérén ~ bérén*, Ak *perek*, Me *perek* || Xi *nauhu*, Ju *anáúhu*, *anáuhihi* || Pu *tiwa*, Kt *horowa* ||
Mw *?iwop* || Ku *tabij-ʔōm* || Wa *kām* || Ma *kārāj* || Tū *tāān* || Ka *cára-rem* ||

015-SMALL

Tā *āhit*, Wa *nīn*, Tū *sin*, Ak *tin*, Me *sīt*, Xi *fíj*, Ju *-fíj*, Ka *?it-tem*, Pu *jinīnī*, Ar *-āciit*, Gv *-ciciit*, Zo *-cijit*, Sa *-fīt*,
Su *-fīn*, Kt *?inā* || Mu *-pítma*, Ku *ipit* || Pg *miji* || Uk *t-aʔi mi* || Pt *fuʔi* || Aw *matsūʔjit* || Mw *kuriin* || Ma *?iui.ii* ||

016-WOMAN

Pg *kupa*, Uk *kūjā*, Tā *koti*, Pt *kupa*, Aw *kujā*, Pu *pakoja* || Wa *ārāmīrā*, Ma *arāpījā*, Tū *aramirā*, Ak *aramira*, Me *aramira* ||
Ar *βādzet*, Gv *βādzet*, Zo *βāzet*, Sa *βāzet*, Su *βāʔet* || Xi *sidza*, Ju *iidza* || Mw *hariporia* || Mu *ajátjāt* || Ku *ao* ||
Ka *maʔpəj* || Kt *ej pat* ||

017-MAN

Ar *booj*, Gv *òòj*, Zo *βij*, Sa *βij*, Su *ooj*, *óój* || Ma *nākoβot*, Ak *naku*, Me *nakop* || Pg *kuimbaʔe*, Pt *akwaimbeʔe* ||
Xi *senapi*, Ju *senáhí* || Uk *sawaʔe* || Aw *aite* || Ma *ihajnia* || Mu *añókátkát* || Ku *teʔin* || Wa *ngwajtkip* || Tū *okio* ||
Ka *maʔwit* || Pu *abitʔaj* || Kt *ota* ||
(Tā ?)

018-PERSON

Pg *ava*, Uk *awa*, Tā *āwā*, Wa *aote nā*, Ak *aotfe*, Me *aose* || Pu *dede*, Ar *pādere*, Gv *pa-derè*, Zo *pādere*, Sa *pā-deet*,
Su *pa-íteer* || Ma *kiteʔ*, Tū *kire* || Pa *ahe* || Aw *mōʔat* || Mw *miit* || Xi *tana* || Ju *dubiá* || Ka *iʔtə* || Kt *pieso* ||
(Mu ? Ku ?)

019-FISH

Ku *potip*, Wa *iβojt*, Ma *potkap*, Tū *ipot*, Ka *ip*, Pu *?ipʔaj*, Ar *bolíp*, Gv *bolíp*, Zo *bolíp*, Sa *bolíp*, Su *moríp*, *moríw-aa*, Kt *?ip* ||
Pg *pira*, Uk *pira*, Tā *hipirā*, Pa *pira*, Aw *piraʔit*, Ma *pi(i)ra*, Ak *kojtpit*, Me *kijpit*, Xi *fita*, Ju *piʔa* || Mu *ajimá* ||



020-BIRD

Pg *gwira*, Uk *wira*, Ta *wirāhi*, Pt *gwira*, Wa *nūkira*, Ma *mōkira*, Me *ōkira* || Ar *ídít*, Gv *ídíít*, Su *íjít* || Mu *wásə*, Ku *osí* || Aw *karaʔiput* || Mw *weita* || Tu *kijamʔiri* || Ak *pire* || Ka *ʔja ʔip* || Pu *mafajā* || Xi *iti* || Ju *uffí* || Kt *papidnā* || (Zo ? Sa ?)

021-DOG

Wa *amēko*, Ma *amēko*, Tu *amēko*, Ak *ameko*, Me *ameko*, Pu *ameko*, Ar *nekó*, Kt *ōmbakí* || Gv *áwili*, Zo *áwili*, Sa *áwili*, *áwii*, Su *áwiri* || Pg *jagwa*, Uk *jawar*, Pt *ʔaŋwatij* || Ma *aware*, Ku *ʔoara* || Xi *api*, Ju *apí* || Aw *tuwawatu* || Mu *akírítjé* || Ka *waw waw* || (Ta ?)

022-LOUSE

Pg *ki*, Uk *ki*, Ta *kip*, Pt *-kiv*, Aw *ʔakip*, Mw *ɲip*, Mu *kíp*, Ku *akip*, Wa *āŋgip*, Ma *ɲgip*, Tu *kip*, Ak *kip*, Me *kip*, Xi *kípa*, Ju *kípá*, Pu *típ*, Ar *git*, Gv *git*, Zo *git*, Sa *gip*, Su *ɲip*, Kt *gep* || Ka *nāp* ||

023-TREE

Pg *iβira*, Uk *iʔi*, Ta *hiwirā*, Pt *ʔiv*, *iva*, Aw *ʔip*, Ma *arja-ʔip*, Mu *ʔip*, Ku *ʔip*, Wa *kip*, Ma *kip*, Tp *kip*, Ak *kip*, Me *kípkiba*, Xi *ipa*, Ka *maʔip*, Pu *waʔip*, Ar *íip*, Gv *īip*, Zo *iip*, Sa *iip*, Su *íip*, Kt *ʔep* || Ju *āhúá* ||

024-SEED

Pg *t-aʔii*, Uk *haʔí*, Ta *āhij*, Pt *-aʔij*, Aw *aʔij*, Mw *h-aʔij* || Pu *kap*, Ar *káp*, Gv *káp*, *káàp*, Zo *káp*, Sa *káp*, Su *iba-káp* || Wa *kit*, Tu *kit*, Ak *kit*, Me *kit* || Mu *ta ~ da*, Ku *ta ~ da* || Xi *-bia*, Ju *-biʔá* || Ma *ʔupa*, Kt *sipo* || Ka *aʔ-cot* ||

025-LEAF

Pg *t-ogwe*, Uk *h-o*, Ta *ap*, Pt *-ova*, Aw *op*, Ma *upip*, Mu *təp ~ dəp*, Ku *típ ~ líp*, Wa *kara-ndep*, Ma *tjeep*, Tu *hep*, Ak *tep*, Me *ep*, Xi *ipa supa*, Ju *-úpá*, Ka *naʔjop ciʔ*, Pu *təp*, Ar *tsep*, Gv *tsep*, Zo *sep*, Sa *bá-sep*, Kt *ʔepesap* || Su *mó-síín* ||

026-ROOT

Pg *t-apo*, Uk *h-apo*, Pt *-apo*, Aw *apo*, Ma *hapo ~ sapo*, Mu *təbá ~ nəbá*, Ku *tabiʔ* || Ma *ēmbiaʔ*, Ak *kíbita*, Me *kípkibisa*, Tu *kípkipʔi* || Ar *pákʔa*, Gv *págaá*, Zo *pága*, Sa *sobákʔaa* || Wa *kíjupe* || Ka *acibe* || Su *tákón* || Kt *kíñĩmbi* || (Ta ? Xi ? Ju ? Pu ?)

027-BARK

Ta *ipe*, Pt *iva*, Aw *ʔapeput*, Mw *arjaʔip ipe*, Wa *ape*, Ma *aʔpee*, Tu *ape*, Ak *pe*, Me *s-ape*, Xi *-sa*, Ju *abé*, Ka *aʔ-caʔpe*, Pu *tabe*, Ar *tsábé*, Gv *tsábèè*, Zo *sábèè*, Sa *sébé* || Mu *taí-feé*, Ku *ja-kíe* || Pg *pire* || Su *sérék* || Kt *pikip* || (Uk ?)

028-SKIN

Pg *pire*, Uk *i-pirer*, Ta *pit*, Pt *-pir*, Aw *pit*, Mw *ai-pe*, Wa *pe*, Ma *pe(e)*, Tū *pee*, Ak *pe*, Me *i-pe*, Pu *tabe*, Ka *aʔ-peon peʔ*, Ar *tsape*, Kt *pa* || Gv *-tsérék*, Zo *-sérék*, Sa *-sérék*, Su *férek* || Mu *feé*, Ku *kíe* || Xi *-sa*, Ju *-sa* ||

029-FLESH/MEAT

Mu *ěn*, Ku *ěn*, Wa *iko-něrã*, Ma *nĩraʔ*, Tū *nienʔã*, Me *kwe jěrã*, Ar *jöp*, Gv *jööp*, Zo *jóób-a*, Su *jóm-a* || Pg *s-oʔo*, Uk *h-u-kwer*, Ta *aha*, Pt *-aʔo*, Aw *ujã* || Xi *ata*, Ju *aťá*, Pu *ʔita* || Mw *i-puʔi* || Ka *cím* || Kt *pisip* || (Ak ?)

030-BLOOD

Pg *t-ugwi*, Uk *h-owi*, Ta *owi*, Pt *-gwi*, Aw *uwik*, Mw *huu ~ suu*, Mu *toj ~ doj*, Ku *toj ~ łoj* || Wa *ndzai*, Ma *tfei*, Tū *ei*, Ak *eʔi*, *t-eʔu*, Me *a.i* || Ar *-ciit*, Gv *-ciit*, Zo *-ciit*, Sa *-fiit*, Su *-fiir* || Xi *apeta*, Ju *apeta* || Ka *i-ju* || Kt *ge* ||

031-BONE

Pg *kaŋwe*, Uk *kaŋwer*, Ta *kiŋ*, Pt *-kaŋ*, Aw *kaŋ*, Mw *i-kaŋ*, Wa *akãrã*, Tū *akanʔa*, Ak *akã*, Me *o-aako*, Ka *i-cigã*, Ar *káálĩ*, *káli*, Gv *káľĩ*, Zo *káľĩ*, Sa *káál*, Su *-káár* || Mu *taó ~ daó*, Ku *tao ~ łao*, Ma *tfeβaoo* || Xi *-paki*, Ju *-paki* || Pu *murüp* || Kt *ʔep* ||

032-EGG

Pg *t-upiʔa*, Uk *i-piʔa*, Ta *opihã*, Pt *-upiʔa*, Aw *upiʔa*, Mw *h-upiʔa*, Mu *topsã ~ dopsã*, Ku *tóbiã ~ łóbiã*, Wa *ipia*, Ma *tʔopi.a*, Tū *opsiʔa*, Ak *umbitaap*, Me *opitsa*, Xi *i-dʒia*, Ju *upιά*, Su *sipi* || Pu *akap*, Ar *káp*, Gv *káp*, Zo *káp*, Sa *káp*, Su *káp* || Ka *aʔ-joga* ||

033-GREASE/FAT

Uk *ka*, Ta *kam*, Pt *-kav*, Aw *kap*, Ma *i-kap*, Mu *jep*, Ku *jep*, Wa *ndzap*, Tū *ap*, Ak *i-ʔap*, Me *jap sese*, Xi *i-kapa*, Ju *i-kahá*, Ka *i-kap*, Ar *-kap*, Gv *-kap*, Zo *-kap*, Sa *-kap*, Su *-kap* || Pg *nandi* || Ma *werep* || Pu *bifoa* || Kt *oroja* ||

034-HORN

Uk *i-ʔak*, Aw *ʔak*, Mu *akanásá*, Wa *nãngoja*, Tū *awsa*, Ak *aotʔa*, Me *s-akosa* || Pg *t-atĩ*, Ta *ãtĩ*, Pt *-atĩ*, Mw *i-aut*, Xi *afã*, Ju *afã* || Ar *-apekot*, Gv *-ápekòt* || Ma *api-kib*, Kt *opikĩjõ* || Ka *aʔ-naʔin* || Zo *ciβatóa* || Su *nepí koor* || (Ku ? Pu ? Sa ?)

035-TAIL

Pg *t-ugwaj*, Uk *h-uwaj*, Ta *owãj*, Pt *gwaja*, Aw *uwaj*, Mw *h-owaipo*, Mu *toajbã ~ doajbã*, Ku *tajbiʔ*, Wa *ndzokwaj*, Ma *něn-tfoaj*, Tū *oajt*, Ak *owaj*, Xi *watapa*, Ju *wátáha*, Kt *sipoj* || Ka *aʔ-capóp piʔ*, Pu *tabop*, Ar *-tsapóʔp*, Gv *-tsapóóʔp*, Zo *-sapóóʔp*, Sa *-sapóʔp*, Su *-sapom* || Me *s-apirip* ||

036-FEATHER

Pg *t-agwe*, Uk *h-a*, Ta *am*, Pt *-ava*, Aw *ap*, Mw *i-pope sap*, Mu *tap ~ dap*, Ku *tap ~ ʔap*, Ma *tʔaa*, Me *tap*, Xi *-taba*, Ka *aʔ-cap*, Pu *təp*, Ar *-tsép*, Gv *-tsép*, Zo *-sép*, Sa *-sép* || Wa *peo*, Tū *pepʔo*, Ak *pebo*, Kt *papi* || Ju *bitahá* || Su *-posán* ||



037-HAIR

Pg *t-agwe*, Uk *h-a*, Tā *h-am*, Pt *-(?)av*, Aw *ap*, Ma *a-hap*, Mu *tap ~ dap*, Ku *tap ~ †ap*, Wa *ojã-ndap*, Tū *apapʔa-hap*, Ak *tap*, Me *tap*, Xi *-taba*, Ju *-tabá*, Ka *aʔ-naʔcap*, Pu *tap*, Ar *tsép*, Gv *tsép*, Zo *sép*, Sa *sép*, Kt *sop* || Ma *aʔtim* || Su *-sin, -síin* ||

038-HEAD

Pg *akã*, Uk *i-akã*, Tā *ãkiŋ*, Pt *-akaŋ*, Mw *ai-ʔakaŋ*, Ma *akare*, Pu *afã* || Ar *-ádát*, Gv *-ádáàt*, Zo *-ádáàt, ádáàt*, Sa *-adátʔa, ádáatʔa*, Su *-ánár, ánáár* || Mu *aʔá*, Ku *ʔa*, Kt *ʔo* || Ak *anam*, Me *s-anip* || Xi *-taba*, Ju *-tabá* || Aw *ʔaput* || Wa *oja* || Tū *apapʔa* || Ka *anaká* ||

039-EAR

Pg *nambi*, Uk *i-nambi*, Tā *nami*, Pt *nambi*, Aw *j-ãpi*, Mu *nəjbə*, Ku *jaöpi*, Ar *-nepiʔap*, Gv *-nepi-àp*, Zo *-népi-áp*, Sa *nãbi-bé*, Su *-nepi-bé* || Mw *ai-hape*, Wa *apitep*, Ma *aʔpitʔeep*, Tū *apsiripʔa*, Ak *apitep*, Me *o-apitep*, Ka *opirisap* || Xi *jãfuka* || Ka *i-nakira peʔ* || Pu *ʔapetə* || (Ju ?)

040-EYE

Pg *t-esa*, Uk *eha*, Tā *ěã*, Pt *-eaʔir*, Aw *ta*, Mw *ah-eha*, Mu *etá*, Ku *eta(?)*, Ma *tʔiʔa*, Xi *sea*, Ju *-eʔá*, Ar *-ja-káp*, Gv *-ja-kîp*, Zo *-ja-kîp*, Sa *-za-káp*, Su *-ja-káwa* || Wa *eʔapap*, Tū *epa*, Ak *epapa*, Me *o-ebaopap* || Ka *i-cagá ʔaʔ* || Pu *toka* || Kt *siipo* ||

041-NOSE

Uk *i-ãpüi*, Pt *-apin*, Aw *ʔapij*, Mw *ai-ʔãpi*, Mu *ʔabə ~ nəbə*, Ku *tömiʔ, nõmiʔ, ʔömi, täjmiʔ*, Wa *ãpia*, Ma *nãpiʔ*, Tū *amsi*, Ak *ampita*, Me *o-ãpisa*, Xi *jamikua*, Ar *-amĩ*, Gv *-ámî*, Zo *-ámii*, Sa *-aʔiʔã*, Su *-ámĩã*, Kt *dʒopiʔop* || Pg *tĩ*, Tā *tĩ* || Ju *-iʔã* || Ka *i-naʔcək toʔ* || Pu *nũʔã* ||

042-MOUTH

Pg *juru*, Uk *juru*, Tā *ʔoro*, Pt *juru*, Ma *ʔuraʔpi*, Pu *uruʔap* || Ar *-ko*, Gv *-ko*, Zo *-ko*, Sa *-ko*, Su *-ko*, Kt *korõmbo* || Mw *ai-wě*, Wa *inẽmpe*, Tū *ojě*, Ak *jě*, Me *-ijě, ĩjě* || Aw *atupi*, Mu *pi ~ bi*, Ku *bi(?)* || Xi *-mita* || Ju *káʔibia* || Ka *aʔ-nãk káʔ* ||

043-TOOTH

Pg *t-ãi*, Uk *h-ãi*, Tā *ĩ*, Pt *-aŋ*, Aw *ãj*, Mw *ah-ãi*, Mu *těj ~ něj*, Ku *těj ~ ʔěj*, Wa *onãŋ*, Ma *nãŋ*, Tū *jãj*, Ak *nãj*, Me *o-jãj ~ o-nãj*, Xi *-ajã*, Ju *-ajã*, Ka *i-jãj kap*, Pu *ĩ-kap*, Ar *-jěéj*, Gv *-jěéj*, Zo *-jěéj*, Sa *-ĩt*, Kt *nõŋ* || Su *-kaap* ||

044-TONGUE

Pg *kũ*, Tā *kõ*, Pt *-kũ*, Aw *ëkũ*, Mw *a-hekũ*, Mu *kõ*, Ku *kõ*, Wa *õŋõ*, Ma *ʔõmtʔẽm*, Tū *ʔõpe*, Ak *ʔõ*, Me *ki-õ*, Xi *-kuã*, Ju *-kuã*, Pu *kobe*, Ar *-ko-káp*, Gv *-ko-kîp*, Zo *-ko-kîp*, Sa *-ko-sérék*, Su *-ko-féér*, Ka *korõmbo* || Uk *h-embe* || Ka *i-jogá peʔ* ||



045-CLAW

Pg *piapě*, Uk *i-piapě*, Ta *miapě*, Pt *-(puã)pě*, Aw *pwã*, Ma *mboape*, Me *po ape* || Ar *-cákõõj*, Gv *-kõõj*, Zo *-pí-kõõj*, Sa *sakõj*, Su *-kõj*, Kt *pisokõ* || Mw *ai-pũũjã*, Wa *kĩrĩnã*, Tu *kĩrĩjã*, Ka *i-cijõ*, Pu *fukujã* || Mu *nã*, Ku *inã* || Xi *-wãrãjã* || Ju *-uʔã* || (Ak ?)

046-FOOT

Pg *pi*, Uk *i-pi*, Ta *mi*, Pt *-pi*, Aw *ai-pi*, Mu *i*, Ku *i*, Wa *mbi*, o-*βi*, Ma *mbi*, Tu *sito*, Ak o-*pi* [obi], Me o-*pitso*, Xi *bidapa*, Ju *bidaha*, *bidahá*, Ka *i-pibeʔ*, Pu *fibe*, Ar *-bí ~ -pí*, Gv *-bí ~ -pí*, Zo *-bí ~ -pí*, Sa *-pi-pe*, *-bíʔa*, Su *-mí-pe*, *-pí-pe*, Kt *pi* ||

047-KNEE

Pg *t-enipiʔã*, Pt *-enipiʔã*, Aw *piʔã*, Mw *ai-pi akaŋa*, Wa *okimĩã*, Ma *kapĩã*, Tu *mianʔa*, Ak *iamina* || Ar *-tsabi-káp*, Gv *-tsabi-káap*, Zo *-sabi-káap*, Sa *-sábikáp*, Su *sábiikába* || Uk *kanawaj*, Ta *kanawã* || Mu *õŋʔá*, Ku *õŋʔá* || Xi *-mã*, Ju *-maʔã* || Me o-*esegap* || Ka *i-jin káʔ* || Kt *saʔep otiit* || (Pu ?)

048-HAND

Pg *po*, Uk *i-po*, Ta *ma*, Pt *-po*, Aw *po*, Mw *ai-po*, Wa *mbo*, o-*βo*, Ma *mbo*, Tu *φo*, Ak o-*po* [obo], Me o-*po*, Xi *-ba*, Ju *-wá*, Ka *i-pábeʔ*, Pu *ba*, Ar *-pábe*, Gv *-pábe*, Zo *-pábe*, Sa *-pábe*, Su *-pábe*, Kt *pi* || Mu *i-bó*, Ku *bi* ||

049-BELLY

Ta *ewek*, Pt *-eveg*, Mu *ʔæk*, Ku *ʔik* || Ka *i-kun*, Su *-gã*, *-ágãã*, Kt *kõŋ* || Mu *mãin*, Ma *neipe* || Ak *eʔo*, Me *e.it* || Xi *-waza*, Ju *-wãzã* || Ar *-piʔap*, Gv *-pí-ap* || Pg *t-ie* || Uk *ndiwa* || Aw *polaw* || Ma *ahunhiʔa* || Tu *patak* || Pu *furuaka* || Zo *-kolí-á* || Sa *-pakʔik* ||

050-NECK

Pg *ajura*, Uk *jurupi*, Ta *ʔot*, Pt *jur*, Aw *turʔip*, Mw *a-hurʔip*, Xi *uburia*, Ka *i-ot káʔ* || Ar *-ãbo kããĩĩ*, Gv *-ábôð kãĩĩ*, Zo *-abóó kãĩĩ*, Sa *-ãbo-kããĩ*, Su *-ámoo-kããr* || Wa *o-gotkip*, Ma *Botkip*, Tu *otkip*, Ak *potkip*, Me *kotkip* || Mu *aŋóbə*, *j-aŋóbə*, Ku *anõbi*, *j-anõbiʔ* || Ju *-ĩʔũ* || Pu *bufuka* || Kt *hit* ||

051-BREAST

Pg *kama*, Uk *kambi*, Ta *kim*, Pt *-kam*, Mu *i-kãm*, Ku *kãm*, Wa *ŋëm*, Ma *ŋëm*, Tu *këm*, Ak *kem*, Me *i-këp*, Xi *namã*, Ju *-namã*, Ka *nãm ʔaʔ*, Ar *-nãpʔa*, Gv *-nam-aá*, Zo *-nãβ-ãã*, Su *-nõma*, Kt *nõm* || Aw *pozíʔa*, Mw *ai-potiʔa* || Pu *porabedə* || (Sa ?)

052-HEART/GUTS

Wa *mãñõã*, Tu *anoʔa*, Ak *anoa*, Me o-*anoa*, Ar *-ágõ-káp*, Gv *-ágõ-ã*, Zo *-ágõ-ã*, Sa *-ãgõʔã*, Su *-ágõ-ã* || Pg *neʔã*, Ta *ʔihĩ*, Pt *-ŋaʔaʔi*, Aw *etãj*, Mw *ai-weʔã* || Uk *firaha(m)* || Mu *aʔõʔabida* || Ku *ʔõŋʔõŋʔa* || Ma *piito* || Ju *waikáhá* || Ka *i-cáragáʔ* || Pu *minaka* || Kt *hadnĩpa* || (Xi ?)

053-LIVER

Pg *piʔa*, Uk *i-piʔa*, Ta *mihã*, Pt *-piʔa*, Mw *i-piʔa*, Mu *j-opsə*, Ku *biə*, Wa *o-pia*, Ma *pi.aʔ*, Tu *siʔa*, Me *o-pisa*, Xi *-bia*, Ju *-biʔá*, Ka *i-pía ʔaʔ*, Pu *bi.a*, *mbi.a*, Ar *-tsaa*, Gv *-tsaá*, Zo *-saa*, Sa *-sáʔa*, Su *-saa* || Aw *pere* || Kt *kiri* || (Ak ?)

054-DRINK

Pg *ha-iʔu*, Uk *uʔu*, Tp *iho*, Pt *-iʔu*, Aw *iʔu*, Mw *are-ʔiʔu*, Ku *ʒe-jʔo*, Wa *ka*, Ma *kaʔ*, Tu *ka*, Ak *apeka*, Me *kaa*, Ka *ʔot*, Pu *ʔo* || Ar *ci-ʒa*, Gv *ci-ʒa*, Zo *-ʒa*, Sa *-ʒa* || Xi *wi*, Ju *awí* || Mu *ti-kõn* || Su *gútgút* || Ka *ahi* ||

055-EAT

Pg *a-ʔu*, Uk *u-ʔu*, Ta *ho*, Pt *-ʔu*, Aw *ʔu*, Mw *at-uʔu*, Mu *ʔo*, *kõn*, Ku *do*, Wa *ka*, Ma *ka*, Tu *ka*, Ak *ka*, Me *kaa*, Xi *fu*, Ju *ifú*, Ka *ʔot*, Pu *ʔo* || Ar *ʒa*, Gv *-ʒa*, Zo *-ʒa*, Sa *-ʒa*, Su *-wa* || Kt *pitʔi* ||

056-BITE

Pg *ai-suʔu*, Uk *suʔu*, Ta *oho*, Pt *-huʔu*, Aw *tuʔu*, Mw *ahe-katuʔu*, Tu *weka*, Ak *ʔoka*, Me *i-sogoa*, Xi *(a)tu*, Ju *aʔú*, Ka *-tót*, Pu *feka*, Sa *-ákaal*, Su *-áka(a)r*, Kt *okoot* || Ar *ʒa*, Gv *ʒa*, Zo *ʒa* || Wa *pirikwa*, Ma *mborõnga* || Mu *á* || Ku *de-ʒek* ||

057-SEE

Aw *tup*, Mu *ʔo*, Ku *do*, Wa *toa*, Ma *to.a*, Tu *toa*, Ak *i-ʔop*, Me *i-soa*, Ka *toj*, Pu *dopa*, Kt *soʔoot* || Pg *a-hefa*, Uk *u-sak*, Ta *i-ʔák*, Pt *-epiag*, Xi *-zaku*, Ju *-zákú* || Ar *-íkinì*, Gv *-ákinì*, *-íkinì*, Zo *-íkinì*, Sa *-íkinì*, Su *-íkiin* || Mw *ar-aʔakasa* ||

058-HEAR

Pg *a-hendu*, Uk *a-hendu*, Ta *inop*, Pt *-enduv*, Aw *ětup*, Mw *are-wanětup*, Xi *ědu*, Ju *ědú* || Ar *-pii*, Gv *-pii*, Zo *-pii*, Sa *-pii*, Su *-we-pii* || Wa *ngwaktoa*, Ma *kiʒaʔtoa*, Me *i-kwaktsoa* || Mu *aʔáʔo*, Ku *kãjdo* || Tu *apsiʔa* || Ka *wero toj* || Kt *opiso* || (Ak ? Pu ?)

059-KNOW

Pg *ai-kuaa*, Uk *u-kwa*, Ta *a-kwaam*, Pt *-kwahav*, Aw *kwawap*, Mw *ati-kuap* || Ar *-jaat*, Gv *-jaàt*, Zo *-jaat* || Mu *ʔajbit*, Ku *taibit* || Tu *oap-ʔia*, Me *soap samek* || Wa *ʒoëndop*, Kt *sõndip* || Xi *bahu*, Ju *ubahú* || Ma *kiʒatoa* || Ka *cahməj nãn* || (Ak ? Pu ? Sa ? Su ?)

060-SLEEP

Pg *a-ke*, Uk *a-ker*, Ta *ket*, Pt *-kir*, Aw *tet*, Mw *are-ke*, Mu *jét*, Ku *jet*, Wa *era*, Ma *era*, Tu *ʔera*, Ak *era*, Me *se-era*, Ka *ken*, Pu *keta*, Ar *-kere*, Gv *-kere*, Zo *-kere*, Sa *-keet*, Su *-keer*, Kt *kat* || Xi *siu*, Ju *iju* ||

061-DIE

Pg *a-mano*, Uk *manõ*, Tã *manõ*, Pt *-mano*, Aw *-majõ* || Wa *paga*, Tu *pawa*, Me *se-poroka*, Ka *paj*, Kt *pop* || Ar *-Bii*, Gv *-Bii*, Zo *-Bii*, Sa *-jii*, *-ii*, Su *-ii* || Mu *éřã*, Ku *ěřã*, Xi *(h)ejã*, Ju *řeřã* || Mw *ui-kuřuro* || Ma *piitorora* || Pu *fomorõm* || (Ak ?)

062-KILL

Pg *a-juka*, Uk *juk(w)a*, Pt *-juka*, Mw *ati-řauka*, Mu *aõka*, Ku *aoka*, Xi *abaku*, Ju *abákú*, Ar *-aka*, Gv *-aka*, Zo *-aka*, Sa *-aka*, Su *-aka*, Kt *oki* || Wa *õmba*, Tu *õpa*, Me *s-õpaa* || Ka *ař-wĩn*, Pu *bí* || Tã *hãpiti* || Aw *kij* || Ma *ponga* || Ak *mia* ||

063-SWIM

Pg *ha-ita*, Tã *hiitam*, Pt *-itav*, Aw *ita(ta)p*, Mw *are-řiha*, Me *se-kia* || Gv *kápkáBá*, Su *kápkábá* || Mu *dok* || Ku *titi-řãm* || Wa *tiapa* || Tu *řewra* || Xi *tahu* || Ju *ibikáráhu* || Ka *puř puř* || Ar *táktãřá* || Zo *kójkóřã* || Sa *-sátë* || Kt *tak tak* || (Uk ? Ma ? Ak ? Pu ?)

064-FLY

Pg *a-veve*, Uk *wewe*, Tã *wewe*, Pt *-veve* || Tu *pep ora*, Gv *-pepó-tëë* || Xi *aũ*, Ju *řáú* || Aw *-wúre* || Mu *pəpəp* || Wa *embira* || (Mw ? Ku ? Ma ? Ak ? Me ? Ka ? Pu ? Ar ? Zo ? Sa ? Su ? Kt ?)

065-WALK

Ar *-Bere-tá*, Gv *-Bêre-tá*, Zo *Beet-tá*, Sa *-Béere*, Su *-Béera* || Mw *uhe-wirik*, Mu *wəřəřəř*, Ma *Batera* || Pg *a-gwata*, Uk *wata*, Tã *ãtã* || Tu *sitkia*, Me *ekietkia* || Ku *řãřãřã*, Pu *řãřãřã* || Pt *-pimondo* || Aw *eko* || Ma *ořitakwa* || Xi *maseu* || Ju *ipidepide-a* || Ka *kat* || Kt *tarak* || (Ak ?)

066-COME

Pg *ju ~ u*, Uk *t-ur*, Tã *tãt*, Pt *-jor ~ -ur*, Aw *-ut*, Ma *ar-iot*, Mu *dot ~ đřot ~ sot*, Ku *dot*, Pu *Bəta*, Ar *-Bolo*, Gv *-Bolo*, Zo *-Bolo*, Sa *-Bool*, Su *-oor*, Kt *irit* || Ma *Bia*, Ak *ita*, Me *se-iat* || Xi *wi*, Ju *wi* || Wa *tera* || Tu *sa* || Ka *-ti* ||

067-LIE (DOWN)

Ar *-aat*, Gv *-ařãt*, Zo *-aat*, Su *-ááta* || Mu *po*, Ku *po*, *pi*, Pu *bopa* || Pg *a-řeno*, Uk *nino*, Kt *něřa* || Ma *řit*, Me *pikaat* || Tã *ham* || Pt *-řau* || Aw *ořapareju* || Mw *tařtatur* || Wa *ndoa* || Tu *anea* || Xi *řikuru* || Ju *řiřihú* || Ka *-moj* || (Ak ? Sa ?)

068-SIT

Pg *a-gwapí*, Uk *wapik*, Tã *ãpik*, Pt *-řapig*, Mw *ar-ařapik*, Mu *-ãbík*, Xi *biku*, Ju *abíkú*, Pu *tapia* || Ar *-potóó*, Gv *-potóòt*, Zo *-potóòt*, Sa *-potóó*, Su *-pató* || Wa *řõřã*, Me *se-kõřãã* || Aw *otigeju* || Ma *řotně* || Ku *đři-ři* || Tu *epsika* || Kt *ibik řiřã* || Ka *paramu* || (Ak ?)



069-STAND

Ar *-adóó*, Gv *-ádóò*, Zo *-ádóò*, Sa *-ãdóó*, Su *-anóó* || Uk *puʔam*, Pt *-am*, Mw *i-põĩʔam* || Mu *tʃəŋ-ʔí*, Ku *tʃãŋ-ʔi* || Xi *maseu*, Ju *mísu* || Ka *-jat*, Pu *ʔõn aja* || Pg *a-nemboʔi* || Ta *tʔop* || Aw *oʔãpeju* || Wa *engwetikia* || Ma *piitʃe* || Tu *osira* || Ak *kerep na* || Me *pogeta* || Kt *dʒigŋã* ||

070-GIVE

Mw *at-um*, Mu *ám*, Ku *(n)õm*, Wa *ɲõã*, Ma *ɲõã*, Tu *õã*, Ak *õã*, Me *i-õa*, Ar *-nõõ*, Gv *-noò*, Zo *-noo*, Sa *-nõõ*, Su *-jõõ* || Pg *a-meʔẽ*, Uk *meʔẽ*, Ta *mãjĩ* || Pt *-mondo*, Aw *moto* || Xi *kua*, Ju *kua*, Pu *beka* || Ka *-maʔãt* || Kt *hit* ||

071-SAY

Pg *ha-ʔe*, Uk *je*, Ta *a-hẽ*, Pt *-ʔe*, Aw *ʔe*, Mw *are-ʔe*, Mu *ʔé*, Me *ke*, Xi *ze*, Ju *a*, Ka *ʔe*, Gv *éè*, Kt *ʔa* || Wa *mãjä*, Ma *nã*, Tu *emaʔa* || Ak *ere(k)wa* || Pu *ʃedowi* ||
(Ku ? Ar ? Zo ? Sa ? Su ?)

072-SUN

Pg *kuara hi*, Uk *(k)warahi*, Pt *kwara(hi)*, Aw *kwat*, Mw *aat*, Mu *káʃi*, Ku *kadzĩ*, Xi *kuazadi*, Ju *kuadĩ*, Ma *ŋgeat*, Ar *gát*, Gv *gát*, Zo *gát*, Sa *gát*, Su *ŋát*, Kt *ŋokĩp* [gokĩp] || Wa *ŋgiakop*, Tu *kiahkop*, Ak *kiakop*, Me *ki-akop* || Ta *an* || Ka *caʔwap* || Pu *toka* ||

073-MOON

Pg *jasi*, Uk *jahi*, Pt *jahi*, Aw *tati*, Mw *wati*, Ku *wadzĩ*, Ar *gáti*, *gát-ti*, Gv *gáti*, Zo *gáti*, Su *ŋátikát*, Kt *oti* || Wa *pakori*, Me *pakori* || Xi *mãdika*, Ju *mãdíká* || Mu *káʃi* || Ma *ʔulii* || Tu *koepa* || Ak *epapap* || Ka *wen* || Pu *ʃereja* ||
(Sa ?)

074-STAR

Uk *jahi rata*, Ta *tãitãtãhi*, Pt *jaitataʔi*, Aw *tatiaʔit*, Ku *wadzĩ-lala*, Ar *gáti-kap*, Gv *gáti-káàp*, Sa *gáti káp*, Kt *oti iripo* || Wa *ʃaʃaro*, Ma *warowaro*, Tu *warowaro*, Me *parobaro* || Xi *nunibia*, Ju *anáĩbia* || Zo *zooj-káàp*, Su *tʃoj-kááap* || Pg *mbija* || Mw *waikiru* || Mu *kasoptá* || Ak *burute* || Ka *cigamo* || Pu *tutukujĩp* ||

075-WATER

Pg *i*, Uk *i*, Ta *hi*, Pt *ihĩ*, Aw *ʔi*, Ma *iʔi*, Mu *idjibĩ*, Ku *tĩti*, Wa *igi*, Ma *ʔi*, Tu *ji*, Ak *iki*, Me *iki*, Xi *ija*, Ju *ijá*, Ka *ici*, Pu *fere*, Ar *ii*, Gv *ii páàp*, Zo *ii-tet*, Sa *ii*, Su *í-tʃer*, Kt *ese* ||

076-RAIN

Pg *ama*, Uk *aman*, Ta *amin*, Pt *-aman*, Aw *aman*, Mw *i-ʔamaan*, Xi *mana*, Ju *amáná*, Ka *amãñ*, Pu *amãñ* || Ar *dzoj*, Gv *dzoj*, Zo *zoj*, Sa *zoj*, Su *ʔoj* || Wa *igi*, Ma *ʔi*, Tu *ji*, Kt *e* || Mu *wãjbaát*, Ku *ibijat* || Me *asoap* ||
(Ak ?)

077-STONE

Pg *ita*, Uk *ita*, Ta *itã*, Pt *itaki*, Aw *kita*, Mu *witá-ṛa*, Ku *wíta-ṛa*, Ka *ijá ṛaṛ*, Ar *caṛa*, Gv *icía*, Zo *icáa*, Sa *fáṛa*, *isáṛa*, Su *ifáá.a* || Wa *ṅgwai*, Ma *ḃa.i*, Tu *kwai*, Ak *waṛi*, Me *waṛi* || Xi *kuapa*, Ju *kuaha* || Mw *nu* || Pu *mburuṛa* || Kt *ejepo* ||

078-SAND

Gv *icá-gáp*, Zo *icá-gáp*, Sa *isá-gáp*, Ka *carokāja* || Mw *iikit*, Pu *ij fabarakap*, Kt *ṛej* || Pg *ivikuṛi*, Uk *iwikuṛi* || Pt *iṛitiṅ*, Aw *itaṛatiṅ* || Wa *kĩṅō*, Ma *kidṛi* || Mu *kaṛó-ririt* || Ku *wíḃaḃa* || Tu *kojōṛiṛit* || Me *topisirik* || Xi *tājājā* || Ju *etá* || Ar *sakit-káp* || Su *ṅōḃj-ṅíír* || (Ta ? Ak ?)

079-EARTH

Mw *ii*, Wa *kijit*, Ma *kij*, Tu *kijt*, Ak *kijt*, Me *kimakij*, Pu *ṛij*, Gv *góój*, Zo *góój*, Su *ṅóój* || Pg *ivi*, Uk *iwi*, Ta *iwi*, Pt *ivi*, Mu *ipí*, Ku *wiṛ*, Xi *ipia*, Ju *epiá*, Kt *ejepi* || Aw *amantaṛok* || Ka *iganā* || Ar *ṛééj* || Sa *giitṛa* ||

080-CLOUD

Mu *kabi-kérééré*, Ku *kabiḃoḃo*, Me *kwajpe niik*, Xi *kapusiā* || Ar *Bakot*, Gv *ḃákoraá*, Zo *ḃákoraá*, Sa *Bakóótṛa* || Aw *iwitiṅ*, Mw *iwihiṅ* || Pg *arai* || Uk *iwa takāḃi* || Ta *amināip* || Pt *atatiṛṅiuhu* || Wa *igipikārāṅ* || Ma *ipiget* || Tu *jitopṛa* || Ka *carogĩn* || Su *ṅáni-kít* || Kt *esira* || (Ak ? Ju ? Pu ?)

081-SMOKE

Pg *t-ataṛ*, Uk *tata takāḃi*, Pt *-atatiṅ*, Aw *tazatiṅ*, Mw *ihij*, Mu *tiṅ ~ diṅ*, Ku *tĩṅ*, Wa *ṛiĩṅ*, Ma *ṛiĩṅgēn*, Tu *sĩn*, Ak *niṅ*, Me *otat niik*, Xi *siā*, *jiā*, Ju *afijĩṛá*, Ka *carogĩn*, Ar *ṛiĩkṛa*, *ṛiĩk*, Gv *pó-káj-dĩk*, Zo *pó-káj-nik*, Sa *ḃadĩk*, Su *mókáj niĩṅ*, Kt *iso ṛiĩṅga* || (Ṭṛ ? Pu ?)

082-FIRE

Pg *t-ata*, Uk *tata*, Ta *ātā*, Pt *-ata*, Mw *aria*, Mu *dajá*, Ku *ḃáḃa*, Ma *ujṛfat*, Ak *otat*, Me *otat pok*, Xi *afĩ*, Ju *afĩ*, Ka *cán nāṛ*, Kt *iso* || Ar *káj*, Gv *pó-kááj*, Zo *pó-kááj*, Sa *kááj*, Su *mó-kááj* || Wa *agopkap*, Tu *kopkap* || Aw *ṛapo* || Pu *ḃok*, *dabək* ||

083-ASH

Wa *kijṛēēn*, Ma *kijṛēēn*, Tu *kijṛēēn*, Ak *utat ṛēēn*, Me *jēēt* || Ar *ḃat kōṛ*, Gv *ḃat kôḃṛ kĩt*, Zo *ḃat kōṛ kĩt* || Pg *kusugwe*, Pt *kuhuv* || Uk *tatimbuk*, Aw *tazaṛipuk* || Mu *kabaó-rit*, Ku *kabik* || Mw *iwirut* || Xi *pubuka* || Ka *carĩṅ ṛaṛ* || Pu *ḃi.ā* || Sa *kááj kōṛ* || Su *ibiogap* || Kt *siit* || (Ta ? Ju ?)

084-BURN (INTR.)

Pg *o-kaj*, Uk *uk(w)aj*, Ta *kāj*, Pt *-kai*, Ar *-káj*, Gv *-kááj*, Zo *-kááj*, Sa *-káj* || Aw *api*, Mu *o-i-pik*, *pík*, Ku *o-si-pik* || Xi *tufi*, Ju *tufi* || Mw *are-wuk* || Wa *epokwa* || Ma *ekarĩnā* || Me *koeka* || Ka *aṛ-pagat* || Pu *bakiḃipa* || Su *-paa* || Kt *ṛōnĩn* || (Tu ? Ak ?)



085-PATH

Pg *t-ape*, Uk *pe*, Tā *ãpe*, Pt *-pehe*, Aw *pe*, Mw *muʔap*, Mu *é*, Ku *eʔ*, Wa *apee*, Ma *peeʔ*, Tu *ape*, Ak *ape*, Me *peʔ*, *aapeʔ*, Xi *bapa*, Ju *bahá*, Ka *naʔpit peʔ*, Pu *be*, Ar *be*, Gv *be ~ pe*, Zo *be ~ pe*, Sa *be*, Su *me*, Kt *pa* ||

086-MOUNTAIN

Mu *ʔo-ʔá*, Ku *ʔo-ʔa*, *to-ʔa*, Wa *ndoo*, Ma *ndo.aʔ*, Tu *totet*, Me *soo*, Xi *tua*, Ju *ʔúá*, Ka *no piʔ*, Ar *doo*, *do*, Gv *do ~ to*, Zo *do ~ to*, Su *no*, Kt *neso* [deso] || Pg *iviti*, Tā *iwitit*, Pt *ivitiruhu*, Aw *iwiʔam* || Mw *itiʔok* ||
(Uk ? Ak ? Pu? Sa?)

087-RED

Mw *i-hup*, Ka *up-tem*, Pu *wəp*, Ar *-βóóp*, Gv *-βóò-p*, Zo *-βóò-p*, Sa *βóóp*, Su *-óóp* || Wa *ngopngop*, Tu *sop*, Ak *kop*, Me *i-kop*, Xi *kapururi* || Pg *pitã*, Uk *i-pirã*, Tā *piriŋ*, Pt *-piran*, Aw *pilaŋ* || Mu *-pak*, Ku *pak* || Ma *βirip* || Ju *asúri* || Kt *söm* ||

088-GREEN

Pt *jukiri*, Aw *kit*, Ka *kirik-tem*, Zo *kíri*, Sa *kíit*, Su *-kír*, Kt *ket pitat* || Mw *i-hirip*, Pu *hero.a* || Mu *-rēm*, Ku *rēm* || Tg *hovi*, Uk *h-owi te* || Wa *kwerep*, Ma *ñěřēm* || Xi *akiu*, Ju *akéžú* || Ar *-cirôj*, Gv *-círôj* || Tā *kahakira mahe* || Tu *siʔa* || Me *saʔip* ||
(Ak ?)

089-YELLOW

Ar *-érée*, Gv *-kéréʔáàp*, Zo *-kéréè* || Mu *-pek*, Ku *perek* || Ak *ʔaru*, Me *i-saro* || Ju *jüpi*, Ka *ciöp-tem* || Pg *(he)saiju* || Uk *i-tawa* || Pt *jukiri* || Aw *tup* || Mw *i-kaʔai* || Wa *taroot* || Ma *paraj* || Tu *hapʔe* || Xi *takúʔ* || Pu *ajaβak* || Sa *ʔiʔip* || Su *Mawéaróbo* || Kt *pokorit* ||
(Tā ?)

090-WHITE

Mw *i-kisiŋ*, Ar *kíit*, Gv *-kîit*, Zo *-kîit*, Sa *kíit*, Su *-kíir*, *-kír*, Ka *kit-tem* || Pg *morotĩ*, Pt *-tiŋ*, Aw *tiŋ*, Wa *ndžira*, Tu *hitʔe*, || Ma *ngap*, Xi *kapĩ* || Me *i-paak*, Pu *ajawak*, Kt *pok* || Mu *-rət*, Ku *rit* || Uk *i-tuwir* || Ju *awíiwĩ* ||
(Tā ? Ak ?)

091-BLACK

Ar *-peép*, Gv *-pěèp*, Zo *-peep*, Sa *pép*, Su *-péép*, *i-pep* || Pg *hũ*, Uk *-ũ(n)*, Tā *on*, Pt *-un*, Mw *huun*, Kt *ěëm* || Ak *piċ*, Me *i-piċ*, Ka *piċ-tem* || Wa *tiktik*, Tu *sikʔe* || Xi *tinikĩ*, Ju *itinikĩ* || Aw *kilaw* || Mu *ók* || Ku *rām* || Ma *köm* || Pu *mikã* ||

092-NIGHT

Pg *pihare*, Uk *pitun*, Tā *ipiton*, Pt *ipitun*, Aw *ipitako* || Ar *bicäk*, Gv *bicäk*, Zo *bicäk*, Sa *bisäk*, Su *mifäk* || Wa *ñindak*, Ma *ngitaʔ* || Ak *maʔfo*, Me *masopi* || Xi *kamadihu*, Ju *kamadéhu* || Mw *wätim* || Mu *kabi-óŋ* || Ku *kijã-be* || Tu *simʔe* || Ka *iʔcak mãm* || Pu *few* || Kt *dip* ||

093-HOT

Pg *h-aku*, Uk *h-aku*, Tã *ãkop*, Pt *-akuv*, Aw *akup*, Mw *h-akup*, Mu *tafíp ~ dafíp*, Ku *tákip*, Wa *akop*, Tũ *akop*, Ak *akop*, Me *-akop*, Xi *kuhu*, Ju *akúhú*, Ka *jakõp-tem*, Ar *-adóóp*, Gv *-adóò-p*, Sa *-ado*, *-adóóp*, Su *-adóóp*, Kt *okip* || Ma *kãj* || Pu *dãβa* ||

094-COLD

Mw *raʔak*, Mu *i-tʃək*, *ka-dzək*, Ku *i-tʃik*, *kádɨk*, Wa *pitiik*, Ak *kípiti*, Me *pitsiik*, Xi *taku*, Ju *kuáku*, *itaʔákú*, Ka *pitëk-tem*, Pu *bidek*, Ar *jiták ká*, Sa *ʃitak*, Su *ʃitak*, Kt *ãndik* || Pg *roʔi*, Pt *-roʔi*, Aw *ejoʔik* || Ma *tʃããŋ*, Tũ *peõj* || Gv *-tãŋi-báàp*, Zo *-tãjãbãp* || Uk *i-risã* || Tã *ðhiŋ* ||

095-FULL

Mw *h-owopi*, Gv *bírá*, Zo *bírá*, Su *bíra*, Pu *bidet* || Ma *tõm*, Ka *tõn-nem*, Ar *-tõŋ-jã* || Pg *h-enihẽ*, Pt *-inihem* || Wa *ndzot*, Me *i-ot*, *i-jot* || Xi *nanẽũ*, Ju *naníũ* || Uk *tihirem* || Aw *put* || Mu *benbenj* || Ku *ep* || Tũ *eira* || Kt *osik* || (Ta ? Ak ? Sa ?)

096-GOOD

Wa *pare*, Ma *poat*, Tũ *poat*, Xi *pã*, Ju *wãbí*, Ka *pát-tem*, Ar *-palí*, Gv *-parâat*, Zo *-paraat*, Sa *-palabót* || Uk *katu*, Tã *kãto*, Pt *-katu*, Aw *katu* || Ak *tʃami*, Me *same* || Pg *porã* || Mw *i-waku* || Mu *ʃípat* || Ku *itim* || Pu *kapije* || Su *ãté* || Kt *seʔa* ||

097-NEW

Pg *piahu*, Uk *piahu*, Tã *hião*, Pt *-piahu*, Aw *pitatu* || Gv *-kõro*, Zo *-koro*, Sa *-koot*, *-koor*, Kt *ŋot* [got] || Mw *i-pakup*, Wa *pagop*, Tũ *pakop*, Me *pagop* || Mu *-ísó*, Ku *iti*, Ar *-ít* || Xi *parahu*, Ju *párahú* || Ma *ŋgetʃat* || Ka *nêt-tem* || Pu *huru.a* || Su *páme* || (Ak ?)

098-ROUND

Pg *apuʔa*, Uk *puʔa*, Aw *ʔapoʔa* || Tã *ãpajã* || Pt *akaŋaʔi* || Mw *i-pok* || Mu *rojɾɾj* || Ma *aβiβiβa* || Tũ *toro* || Kt *atĩã* || Ka *piron-nem* || (Ku ? Wa ? Ak ? Me ? Xi ? Ju ? Pu ? Ar ? Gv ? Zo ? Sa ? Su ?)

099-DRY

Pg *kã*, Uk *ʃikã*, Tã *ma-kiŋ*, Pt *-kaŋ*, Aw *mo-kaŋa*, Ma *mu-ŋaŋ*, Ar *-kágãã*, Gv *-kágaà*, Zo *-kágãã*, Sa *-kágã*, Su *-kágãã* || Wa *paβa*, Me *i-paaga* || Xi *kiritu*, Pu *kĩrik* || Mu *káráw* || Ku *pĩrik* || Ma *βok* || Tũ *ketʔe* || Ju *tʃurátʃú*, *huakú* || Ka *aʔcaraŋ nãn* || Kt *pihop* || (Ak ?)

100-NAME

Pg *t-era*, Uk *h-er*, Tp *et*, Pt *-er*, Aw *et*, Mw *het ~ set*, Mu *pätét ~ bätét*, Ku *bítet*, Wa *ndet*, Ma *et*, Tũ *et*, Ak *et*, Me *et*, Xi *ja*, Ju *zá*, Ka *cet*, Pu *tet*, Ar *dzét ~ tsét*, Gv *dzét ~ tsét*, Zo *zét ~ sét*, Sa *zét*, Su *βét ~ tét*, Kt *sat* ||



APPENDIX 2: LIST OF PLANT AND ANIMAL NAMES

The list below contains all animal and plant names used in this paper. It follows the same conventions as the Swadesh list in Appendix 1, with only two differences: due to lack of relevant data in our sources, Tapirapé was eliminated and Paraguayan Guaraní was here replaced by another dialect, Mbyá Guaraní (abbreviated below as Mg).

001-AGOUTI

Mg *akufi*, Uk *akufi*, Pa *akuti*, Aw *akužu ʔjit*, Mw *akuri*, Xi *kuzi*, Ju *akuzí* [akulí] || Wa *ɲgwakĩjã*, Ma *mãkĩja*, Me *mãkĩjã*, Ka *wakãja*, Pu *ʒakĩjã*, Ar *ʒakĩí*, Gv *ʒakĩĩ*, Zo *ʒakĩĩ*, Sa *ʒakii*, Su *wakĩĩ* || Mu *mədí*, Ku *máli* Tu *takamʔa* || Kt *mĩno* [mĩndo] (Ak ?)

002-ANACONDA

Mg *kuriju* || Uk *maju* || Pt *mbojuhu* || Aw *t(u)wajwatu* || Mw *sukuriu* || Mu *márekó-bə* || Ku *numãbibi* || Wa *tigaptarap* || Ma *idnãjã* || Tu *amsi.amʔe* || Me *kwatso poot* || Ju *adzã, tuwĩ* || Ka *mãjgãra ca* || Gv *ĩ mádĩĩt* || Su *ʔobó ti(it)* || Kt *sõn map* [bap] || (Ak ? Xi ? Pu ? Ar ? Zo ? Sa ?)

003-ANATTO

Ar *dóʔa*, Gv *dóʔaá*, *dookáàp*, Zo *dookáàp*, Sa *doʔáʔa*, Su *nó.a* || Wa *ɲgopɲgap*, Ak *kipkap*, Me *koba kaap* || Mw *waʔakap*, Xi *makapa*, Ju *wãkáhá* || Uk *uruku*, Pt *uruku* || Ka *koko*, Kt *ekĩ* || Aw *jukwanʔit* || Mu *ʔókó-ʔa* || Ma *iko* || Tu *tope* (Mg ? Ku ? Pu ?)

004-ANT

Uk *tapiãĩ*, Aw *tapiʔa*, Ka *napía* || Ar *bola*, Gv *bola*, Zo *boluʔ-atáp* || Mg *tai* || Pt *iha* || Mw *saari* || Mu *ɖasápsəp* || Ku *ɲnasipak* || Wa *(n)detpe* || Ma *bitĩraj* || Tu *wekoʔa* || Ak *ʔatʔakop* || Me *kibiri* || Xi *tãrãkuã* || Ju *adzíhá* || Pu *mĩnk, wĩ(ɲ)* || Su *ʔodap* || Kt *nĩkisik* [(n)dikisik] || (Sa ?)

005-ANTEATER

Ar *Batsákólí*, Gv *Batsákólí*, Zo *ʒasakólí*, Sa *ʒasakólí*, Su *mi-fakóór* || Wa *ɲgwendap*, Ak *witap*, Me *kwetap* || Pt *tamanduaʔi*, Aw *tamajua* || Mu *wáriré*, Ku *uarëmatʔa* || Mg *kagware* || Uk *mijarai* || Mw *hĩpa* [hĩmba] || Ma *ũbatʔi* || Tu *hasi.o* || Xi *mazi* || Ju *amaé* || Ka *ecigun* || Pu *afukur* || Kt *oɲopiiti* [oɲopiiti]

006-ARMADILLO

Mg *tatu*, Uk *tatu*, Pt *tatu*, Aw *tatupep*, Mw *sahu*, Mu *dajdó, dajdó*, Ku *ʒajʒo(ʔ)*, Wa *ndato*, Ak *tato*, Ka *jajo*, Pu *jajo*, Ar *mããɖzój, mããɖoj*, Gv *mããɖòj*, Zo *ʒãzooj*, Sa *ʒããzój*, Su *waʔój*, Kt *sosi* || Tu *paroro*, Me *paroraj* || Xi *dusa*, Ju *dúʔá* || Ma *Birijo* ||

007-AÇAÍ PALM

Wa *ngwiri*, Ma *βiri-tʃa*, Tu *witʔi*, Ak *kwiri*, Me *kwiri*, Kt *iri* || Ar *bííp-káp*, Gv *bííp-kîp*, Zo *bííp-kîp*, Su *bííw-a*, *bííb-wa* || Uk *wasai*, Mw *wasaʔi* || Mu *wapərəm-ʔá*, Ku *aporĩ* || Xi *manakuça*, Ju *manakúra* || Mg *arafĩ* (?) || Pt *pinoβiʔip* || Ka *iu kap* || Sa *zépe-káp* ||
(Aw ? Pu ?)

008-BANANA

Mg *pakoβa*, Uk *pako*, Pt *paʔakoβuhu*, Mw *pakua*, Mu *áko-bā*, Ma *pa(a)ko*, Xi *pakuã*, Ju *pakua*, Ar *bákopʔa*, Gv *bákoβáa*, Zo *bákoβaa*, Sa *bákop-tiʔa*, Su *mókowa*, *mókoba* || Wa *epiip*, Tu *epip* || Ak *apara*, Me *apara* || Ka *iwa*, Pu *hiwa* || Aw *pananã* || Ku *pawã* [pãwã] || Kt *asiriti* ||

009-BAT

Pu *ʃipěj*, Ar *ʃííp*, *ʃiíp*, Gv *ʃiíp*, Zo *ʃiíp*, Sa *ʒiíp*, Su *βííp* || Wa *ngwaria*, Ma *wajʃa-liaj*, Tu *wari(ʔ)a*, Tu *kwaritsa* || Uk *andíra*, Pt *andíra* || Mu *máreó*, Ku *marew* || Xi *asa*, Ju *ʔaʔa*, *(ʔ)aʔá* || Mg *mbopi* || Aw *tatiʔa* || Mw *hakiʔi* || Ka *ijo* || Kt *asori* ||
(Ak ?)

010-BEANS

Mg *kumanda*, Uk *kumandaʔi*, Pt *kumanatai*, Aw *kumanaʔi*, Mw *kumanã*, Ak *komãta*, Me *komãta* || Xi *piu*, Ju *pujú* || Gv *koraá*, Zo *korakáp* || Mu *pijão* || Ku *witujʃa* || Wa *ngoʔotoo* || Ma *tãrě* || Tu *tobeko* || Ka *maʔta* || Pu *ʃakakij* || Ar *alítíʔa* || Su *mošemɣúp*, *pajakáp* ||
(Sa ? Kt ?)

011-BEE

Mg *ei*, *eiru*, Pt *hehir* ~ *heir-*, Mu *eit*, Ku *eit*, Wa *engwit*, Tu *ewit.tap*, Me *ekwitsap*, Gv *íit*, Zo *íit*, Sa *íβit-áp*, Kt *eet* || Mw *awiʔa*, Ma *akija*, Xi *wia*, Ju *awiʔá* || Aw *tap*, Ak *itʃap* || Uk *ka* || Ka *wáj* || Pu *ʃāwak* || Su *jóináap* ||
(Ar ?)

012-BRAZIL NUT

Pt *-aĩnĩj*, *nãʔĩ*, Aw *ʔij*, Ma *weʔejã*, Mu *wenáj*, Ku *welʒãĩ*, Xi *ijã*, Ju *eʒã*, Ka *ijã*, Kt *mĩnõ* || Pu *(m)ãm(p)ka*, Ar *mãamgáp*, Gv *maam-gáap*, Zo *mããm-gáap*, Sa *mã(ã)mgáp*, Su *mãjáp*, *mãp-gáap* || Ma *arao*, Tu *arawʔa* || Wa *kãrã*, Ak *kana*, Me *kãrã* || Uk *kantãi* ||
(Mg ?)

013-BUTTERFLY

Ar *kõözér-ap*, Zo *kãzér-ep*, Su *kaléér* || Uk *panam*, Pt *panam*, Ak *penam* || Ku *sorosoro*, Xi *surusuru*, *suusuru*, Ju *nasusú* || Mg *popo*, Mu *waré-pápé-dəp* || Gv *píripkot*, Sa *pikorop* || Mw *morepeʔi*, *morapeʔi*, Wa *mboorap*, *mboora nĩn* || Aw *kujukuju* || Ma *dʒarire*, *zarire* || Tu *pepʔa* || Me *taito* || Ka *kiriwep* || Pu *ʃapeko* || Kt *kin konã* [kidn kodnã] ||



014-CAIMAN

Wa *ngwajjfo*, Ma *βato*, Tu *wao*, Ak *wato* [k^wato], Me *kwato*, Ka *wajo*, Kt *osi* || Mg *jakare*, Uk *jakare*, Pt *jakare*, Mw *jakare*, Xi *jakare*, Ju *jakare* || Ar *βaβó*, Gv *βaβó*, Zo *βaβó*, Sa *βaβó*, Su *βa.ó* || Mu *apát*, Ku *apatjĩ*, Pu *bafa*, *bafare* || Aw *topepirit* ||

015-CAPUCHIN MONKEY (MACACO PREGO)

Ar *batsáj*, Gv *batsáj*, Zo *basaj káap*, Sa *basáj*, Su *maháj* (*kíir*) [matáj]? || Mg *kaʔi*, Pt *kaʔi-ate*, Aw *kaʔjit* || Tu *akirap*, Ak *tokirap*, *takirap*, Me *sakirap* || Mu *tawé*, Ku *tawe* || Xi *jãpãrũmã*, Ju *perumã*, *perumã* || Uk *koso pihun* || Mw *hanuʔaan* || Wa *mbetiʔ* || Ma *ʔõrõm* || Ka *naʔwəj* || Pu *waʔora* || Kt *pikõm* ||

016-CAPYBARA

Ar *βatsájbit*, Gv *βátsáj bit*, Zo *βásõibit*, Sa *βása-dí(k)*, Su *wáhabííraa* [wátabííra] || Mg *kapiʔiβa*, Uk *kapiʔiwar*, Pt *tapiβar*, Aw *kapiwat* || Mu *wé*, Ku *we* || Xi *ata*, Ju *atá* || Ak *ewajawĩ* [ek^wajak^{wĩ}], Me *ikwaaj akoba* || Mw *kupidu*, *pai wato* || Wa *ñõdele* || Ma *tʃaβi* || Tu *takarasi* || Ka *mãro* || Pu *murutu* || Kt *sit heej* [sit heej] ||

017-CARÁ ROOT

Mw *awaiʔa*, Mu *awaj-dá*, Ku *awaj*, Wa *akwa poot*, *akwa-niĩn*, Ma *tʃewa.i*, *tʃewa kõm*, Tu *awate*, Ak *awa* [ak^wa], Me *akwa*, Xi *wasa*, Ju *awáʔá* || Ar *mõjãkít*, Gv *mõõjãá*, Zo *mõjãá*, Sa *mõ(õ)jʔá* || Mg *kara*, Uk *kara*, Pt *karaʔi* || Ka *maraʔã* || Pu *fofotka* || Su *to.á kííra* || Kt *pokoho* ||
(Aw ?)

018-CASHEW

Uk *akaju*, Pt *akajuʔi*, Aw *tatu*, Mw *kazu*, *kasu*, Wa *kaju*, Me *kaʒo*, Xi *kaʒu* || Ar *oliciʔa*, Gv *oliciʔ-aá*, Zo *olifja*, Su *orijí.a*, *orijíáá* || Mu *márəsá-da* || Ma *mbaa* || Tu *patoʔa* || Ka *con* [codn] || Kt *irip ohĩ* ||
(Mg ? Ku ? Ak ? Ju ? Pu ? Sa ?)

019-CHAMELEON

Ma *tʃako tʃato*, Tu *hako eraat*, Me *taako atso* || Mg *teju*, Pt *tejuhu* || Uk *senembi*, Mu *sejemó* [sẽjẽmó] || Xi *kãnabáre*, Ju *kanãbaré* || Aw *tazuza ʔamit* || Mw *suwanã* || Ku *uajtjĩ* || Wa *nanoro* || Ka *jamomõ* || Gv *atsatsó* || Su *neró póoja* || Kt *õhĩna* [õhĩnda] ||
(Ak ? Pu ? Ar ? Zo ? Sa ?)

020-CICADA

Pu *kotkõrã*, Ar *kátkãná*, Gv *katkará áap*, Zo *katkaraa*, Sa *kátkárãá*, Su *járjãráá* || Mg *nakirã*, Pt *nakiran* || Ak *konkona*, Me *kõkõrã* || Mu *kororõj-ta*, Ku *tokorõrõ* || Aw *kũku* || Mw *karawoot* || Wa *βakõngop* || Ma *worẽngope* || Tu *oape* || Ju *karamimãmã* || Ka *agarajõ* || Kt *itj* [ʔiĩj] ||
(Uk ? Xi ?)

021-COATI

Ar *já-bot*, Gv *já-boli*, Zo *já-boli*, Sa *í-bulu*, Su *fí-boor* || Wa *piit*, Tū *siʔit*, Me *piit*, Pu *biik* || Uk *kwafi*, Pt *kwati* || Xi *awi*, Ju *awí* || Mg *fíʔi* || Aw *wajatawit* || Mw *musí* || Mu *pásowáwá* || Ku *kākāo hok* || Ma *mērējā* || Ka *iʔcogo* || Kt *irisa* || (Ak ?)

022-COCKROACH

Mg *taraše*, Uk *tarawe*, Mw *arawe* || Ar *jigikabékāj*, Gv *dzágábékāj* || Pt *karugwarape* || Aw *apeʔaperit* || Wa *mberāmbere* || Ma *jenpet.tik* || Tū *papʔapajro* || Ak *peninket* || Me *abape* || Xi *pikūĩ*, *daidai* || Ka *capekataro* || Pu *koroat* || Su *kabifóórčkāj* || Kt *mikipa* [(m)bikipa] || (Mu ? Ku ? Ju ? Zo ? Sa ?)

023-COCOA

Ka *agaja*, Ar *akópʔa*, *akóbʔa*, Gv *akóòbaá*, Zo *akóoβaa*, Sa *akóópʔa*, *akópʔa*, Su *akóóba*, *akóp-tíaa* || Mg *kakaw* (?), Uk *kaka* || Mu *akadap*, Ku *akáʔap* || Pt *jumbitaʔi*, Ju *újúpá* || Mw *wakore* || Wa *kamboro* || Ma *ndinda* || Tū *atawʔa* || Me *kerero* || Kt *kómo* [kōmbo] || (Ak ? Xi ? Pu ?)

024-CORN

Mg *aβafi*, *aβati*, Uk *aβafi*, Pt *aβati*, Aw *awati*, Mw *awati*, Wa *metiti*, Ma *atiti* [atʔitʔi], Ak *atiti* [atiti], Me *atsitsi* || Gv *maʔek*, Zo *mēek*, Su *meʔek* || Mu *mərə-da*, Ku *marəʔa* || Xi *makati*, Ju *makafí* || Tū *opap* || Ka *nāja* || Pu *fii.a* || Kt *ɲino* [(ɲ)gijo] || (Ar ? Sa ?)

025-COTTON

Mg *mandiju*, Uk *mandeju*, Pt *amandiju*, Aw *ʔamatitu*, Mw *amök(i)jusu* || Ar *góop ciit*, *góp cit*, Gv *góop cīt*, Zo *góop fiit*, Sa *góop fiit*, Su *ɲóop ʔir* || Wa *ororo*, Ma *ororo*, Tū *ororo apʔa*, Ak *ororo*, Me *ororo* || Xi *makua*, Ju *makúá*, Ka *mok* [mbok], Pu *pokʔap*, *apokap* || Mu *boró-bə*, Ku *maro* || Kt *ereri* ||

026-CRAB

Ar *bóló-pa*, Gv *góló-pāā*, Zo *góló-pāā*, Sa *góló-pāʔ-āā*, Su *ɲóór-pāā* || Mw *ikatʔa*, Mu *koará*, Ku *koara*, Wa *koroo* || Tū *kerəʔi*, Me *kerə* || Xi *arua*, Ju *uʔá* || Mg *itakaru* || Uk *tame* || Pt *gwararu* || Aw *tamijit* || Ma *amājā* || Ka *koja* || Pu *afēj* || Kt *are* || (Ak ?)

027-CRICKET

Mg *kiju*, Pt *kijuʔi*, Aw *ekijʔu*, Mw *ukiʔu* || Ma *ngara*, Tū *karāj* || Uk *tukur* || Mu *agupaʔopafjo* || Wa *apĩn* || Ak *jonepo* [ɲünēbu] || Me *toroi* || Xi *pārāpārā* || Ju *kōʔʔí* || Ka *kiriʔkāj* || Sa *takóʔa* || Su *kabifóórčkāj* || Kt *pasēn* (Ku ? Pu ? Ar ? Gv ? Zo ?)

028-CURASSOW

Uk *mitun*, Pt *mītu*, Aw *mītu*, Mu *witō*, Ku *witō*, Ma *mītō* || Ar *βakój*, Gv *βakòðj*, Zo *βakòðj*, Sa *βakóój*, Su *wakój-a* ||
 Tū *koraʔi*, Ak *poraki*, Me *poraki* || Xi *takū*, Ju *takū* || Mw *urukuʔa* || Wa *kiiŋ* || Ka *ināw* || Pu *βitap* || Kt *misĩ* ||
 (Mg ?)

029-DEER

Aw *tiwapat*, Mw *itii*, Ku *idji*, Wa *itii*, Ma *iti* [itii], Ak *iti* [itii], Me *itsii*, Ka *iti*, Pu *idi*, Ar *itíí*, *itíí*, Gv *itii*, Zo *itii*,
 Su *itʔii-ááp*, Kt *ne* [(n)de] || Xi *ahua*, Ju *ahua* || Mg *gwafu* || Uk *arapuha* || Pt *iuhu*, *iuhuʔndi* || Mu *dápsém* || Tū *sajtpare* ||
 (Sa ?)

030-EARTH WORM

Wa *anīŋ*, Ma *atĩ*, Me *atij*, Ka *atīŋ*, Pu *anīt*, Zo *botík*, Sa *botíík*, Su *motíŋ* || Mg *eβoʔi*, Uk *soβoʔi*, Pt *-eβoʔi*, Aw *tewoʔi* ||
 Mu *daseŋ-pə*, Ku *asiŋ* || Mw *uuwi* || Tū *anto* || Ju *kuhaβá* || Kt *ŋitŋ* [(ŋ)gíríj] ||
 (Ak ? Xi ? Ar ? Gv ?)

031-ELECTRIC EEL

Ar *gopáp*, Gv *gopáp*, Zo *gopáp*, Sa *gopám*, Su *ŋopám-aa* || Wa *ndoko*, Ma *ndoko*, Tū *soka*, *soka-poot* || Uk *purake*,
 Pt *mburaki*, Xi *pānāki* || Ka *jogo*, Pu *joko* || Kt *nīŋiti* || Aw *kutate* || Mw *urewo hunʔi* || Mu *məsəre-bə* || Ku *βusire* ||
 Me *kīkwat* || Ju *kīibi* ||
 (Mg ? Ak ?)

032-FLEA/CHIGGER

Mg *tuĩ*, Aw *tuj*, Mw *jun*, Mu *nōŋʔá*, Ku *βōŋ*, Wa *ŋōŋ*, Ma *jōŋ*, Tū *jōtap* || Me *āp-tsap* [āmtsap], Ar *nāmgóp*, Gv *nōp*,
 Zo *nōp*, Su *nōm*, Ka *nāp* || Pt *piahog*, Xi *piʔa*, Ju *pirá* || Uk *ki* || Pu *urufa* || Kt *ŋep* [gep] ||
 (Ak ? Sa ?)

033-FLY

Mg *mberu*, Uk *merũ*, Pt *mberu*, Wa *βārāmbiro*, Ma *merōŋwa*, Pu *amerop* || Tū *meremʔa*, Ak *menemi*,
 Me *kweremi*, *ŋweremi*, Kt *mātm* [mārām] || Aw *tin*, Mw *win* || Mu *ikoéró*, Ku *ikwēno* || Xi *huʔūhuʔũ*,
 Ju *huhurũ*, *hūhūrũ* || Ka *cóp* || Gv *bátsorokapʔ* || Sa *pēnbókʔa* || Su *wákábwa*, *wakába* ||
 (Ar ? Zo ?)

034-GENIPA

Ar *βēcóʔa*, *βēcóʔa*, Gv *Betsóa*, Zo *βetsóa*, Sa *βesó*, *βeesó*, Su *wefóa*, *wefówaa* || Uk *jandipaʔi*, Pt *ɲandipaβ*,
 Aw *tětīpap*, Mw *wāāhop* || Wa *tapoo*, Ma *mētʔaap* || Tū *ʔi*, Ka *i* || Mu *warēmáp-ʔa* || Me *siɡaap* ||
 Kt *kina pason* [ki(dn)da pasoʔ] ||
 (Mg ? Ku ? Ak ? Xi ? Ju ? Pu ?)

035-GLOWWORM

Mg *gwaã*, Uk *uwã*, Aw *wawan* || Ma *mboreeptop*, Tu *porewa* || Gv *ako-kããj*, Su *ako-kããj* || Mu *sópsóp*,
Kt *him himã* [híbm híbmã] || Pt *mu, muhũ* || Mw *wamijã* || Wa *mbambaa* || Me *iraamãj* || Ka *magowip* ||
Pu *tutukuju* || Zo *bagambagapkĩt*
(Ku ? Ak ? Xi ? Ju ? Ar ? Sa ?)

036-GNAT (PIUM)

Ar *sík*, Gv *dik*, Zo *dig-akĩj*, Sa *dik (kíp)*, Su *nik-kĩj, nik* || Pt *piũ*, Aw *ipiũ*, Mw *upiũ* || Mg *mbarigwi mirĩ*,
Uk *mariwĩ* || Mu *kópsé*, Ku *kóbã* [kómĩ-ã] || Ma *mbio t̃fato*, Tu *si?o?iri* || Xi *mapi, mapirapipi*, Ju *mápi* || Wa *tiit* ||
Me *sotsore* || Ka *cici* || Pu *mifirik* || Kt *kĩtk* [kĩrk] ||
(Ak ?)

037-GUAN (JACU)

Mg *jaku*, Uk *jukupehu*, Pt *jaku*, Aw *taku?jit*, Mu *wako*, Ku *wako*, Wa *ɲgwako*, Ma *ɓakupēm*, Tu *wako*, Ak *wako* [kwaku],
Me *kwako* || Gv *tããmôð*, Zo *tamôð*, Su *támoááp* || Xi *tarukawa*, Ju *tarukawá* || Mw *mijũ* || Ka *korét* || Pu *aribew* ||
Sa *mãlãza?áp* || Kt *paĩɲ* [pa?ĩɲ] ||
(Ar ?)

038-HAWK

Ku *ikuã*, Wa *korii*, Ak *konikoni*, Xi *(h)ikũ*, Ju *ekú*, Ka *kokô*, Pu *koko?i*, Ar *ikóló kíp*, Gv *ikóló*, Zo *ikóló*, Sa *ikóló*, Su *ikóór* ||
Tu *kějřã*, Me *keɲã* || Mg *tagwato* || Uk *kawire* || Pt *kwandu* || Aw *muzak* || Mw *hiwi* || Mu *poátpoát* || Ma *pãriö* ||
Kt *pipĩĩ*

039-HOWLER MONKEY (GUARIBA)

Wa *ndai*, Tu *hai*, Ak *taikop*, Me *taa?i*, Ka *jai*, Pu *a?i* || Gv *pekó*, Zo *pekó*, Sa *pikó?aa*, Su *pekóóaa* || Mu *oró.oró*,
Ku *ororo*, Ma *öröɓo* || Aw *akikiwatu*, Mw *awiki* || Xi *waɣa*, Ju *wará, wará* || Mg *ka?i* || Uk *wari* || Pt *jajuhu* || Kt *erĩiti* ||
(Ar ?)

040-HUMMINGBIRD

Aw *pirĩɲit*, Mw *hit?i*, Ma *pĩn*, Tu *miin, miɲkat*, Ar *kinĩt*, Gv *pinĩt*, Zo *kirĩt*, Su *kiirĩn* || Mg *maino*, Uk *wainumbi* ||
Xi *jãkuɲifi*, Ju *jakurifi* || Pt *gware?i* || Mu *dapéwdapéwdá* || Wa *nũk iranĩn* || Ak *t̃faire* || Me *katsae* || Ka *kãram* ||
Pu *firoa* || Kt *kina papinã* [ki(dn)da papidnã] ||
(Ku ? Sa ?)

041-JAGUAR

Ma *amēɲko*, Tu *amēko*, Ak *amēko*, Me *amēɲko atso*, Ka *ameko*, Ar *nēkó*, Gv *nekó*, Zo *nēko*, Sa *mekóó*, Su *mekó*,
Kt *õmaki* [õmbaki] || Uk *jawarete*, Pt *ja?gwar*, Aw *ta?wat* || Ma *awiato*, Mu *widã, wãdã*, Ku *wiɲēm(u)* || Xi *api*,
Ju *apí, apí imãmã* || Mg *fiɓi* || Wa *nõɲ koop* || Pu *puru* ||

042-KINGFISHER

Gv *ícânoʔaá*, Zo *icaná-p*, Sa *íjǎnã-m*, Su *kíjãnaa* || Wa *igítǎn*, Me *kít*, *kĩn* || Ka *cérék*, Pu *jedet* || Uk *warirã hu* || Pt *jataḥoti* || Aw *pirekitaj* || Mw *arirãpa* || Ju *adurá* || Kt *takt takt* [tarak tarak] || (Mg ? Mu ? Ku ? Ma ? Ak ? Xi ? Ar ?)

043-LARGE ANT (TOCANDEIRA)

Ku *ǎbia*, Ma *ɲapi.a*, Ju *anãbí*, Ka *napía*, Kt *noḥí* [(n)dopí] || Ar *gatsá(á)*, Gv *gaatsaá*, Zo *gasaa*, Su *ɲaʔáá* || Wa *ndara*, Tu *hatʔa* || Mg *araraʔa* || Uk *tarakuʔa* || Pt *tukaʔndír* || Mw *watiamã* || Me *atsikep* || Xi *ida* || Pu *mĩɲk* || (Aw ? Mu ? Ak ? Sa ?)

044-LARGE MANDI FISH

Mg *mandi*, Uk *mandiʔi*, Mw *mãti*, Xi *mãndi* || Gv *dóló*, Sa *dóíó* || Wa *ʔiḥot kwaret*, Ka *ip nakãra* || Ar *ojít*, Su *jójpoo* || Aw *tiniãwatu* || Mu *wásã-bã-jí-bã* || Ma *mũkwa* || Tu *ikĩn* || Me *õkoa* || Pu *waita* || Zo *balóò* || Kt *nõɲ pekti* [nõɲ peyeti] || (Pt ? Ku ? Ak ? Ju ?)

045-LIZARD (CALANGO)

Aw *taʔu*, Mu *naʔórék*, Ma *ʔjako*, Tu *hako*, Me *taako*, Xi *jãkuɽupa*, Ju *jakurupá*, Ka *jaʔo* || Ar *zero-káp*, Gv *géro*, Zo *géro*, Sa *geeróó*, Su *ɲeero* || Mg *teju*, Uk *teju kawaru*, Pt *teju*, Mw *anehu* || Wa *ndooja* || Ak *iriri* || Pu *mãjõḅãj* || Kt *õhĩ* || (Ku ?)

046-LOUSE

Mg *kí*, Uk *kí*, Pt *-kiv*, Aw *ʔakip*, Mw *ɲip*, Mu *kíp*, Ku *akip*, Wa *ãɲɲip*, Ma *ɲɲip*, Tu *kíp*, Ak *kíp*, Me *kíp*, Xi *kípa*, Ju *kípá*, Pu *típ*, *tík*, Ar *git*, Gv *git*, Zo *git*, Sa *gip*, Su *ɲip*, Kt *ɲep* [gep] || Ka *nãp*

047-MACAW

Wa *pera* (*ɲgop*), Ma *pera*, Tu *petʔa*, Ak *pera*, Me *pera*, Kt *pat* || Uk *arar*, *araru*, Xi *aɽawi*, Ju *urawí* || Gv *kaatsáál*, Zo *kasáál*, Su *kaʔáár* || Mu *parawa*, Ku *parawa*, *parawãtõ* || Mg *gwaʔa* || Pt *kariʔri*, *tiuhũ* || Aw *tawiti* || Mw *hanuun* || Ka *karo* || Pu *ʃipaja* || (Ar ? Sa?)

048-OPOSSUM

Mg *mbiku*, Uk *mikur*, Pt *mbikuru*, Mu *makóra*, Wa (*ʔu*)*mukura* || Xi *kuhudi*, Ju *hudʒíhudʒí* || Gv *nekó tsõõt*, Su *mekó pí* || Aw *kamitsalaká* || Mw *hunajin* || Ku *ǎariwa* || Tu *sapʔãje* || Me *tamãte* || Ka *mocaj* || Kt *nokõn* [(n)dokõn] || (Ma ? Ak ? Pu ? Ar ? Zo ? Sa ?)

049-OWL

Ma *popoba*, Tu *pop.popʔa*, Me *popoba*, Ka *pobo*, Kt *piipiip* || Pt *hurutaʔi*, Aw *uzit*, Mw *urukut* || Zo *bákóóβ-aa*, Su *mokóóp*, *mokóóβ-aa* || Mg *kururu* || Uk *pipi anjã*, *pipihu* || Mu *kók.kók* || Ku *baru* || Wa *ʔiβao poot* || Xi *kujuhu* || Ju *akuʔú*, *súwi* || Pu *aroʔi* || Ar *gátéʔáp* || Gv *bóðraá* || Sa *balipóʔã* || (Ak ?)

050-PACA

Ar *ãdzá*, Gv *adzã*, *ãdzã*, Zo *ãza*, Sa *βããza*, Su *wala-aa* || Aw *pak*, Mw *pai*, Mu *áj* || Wa *ɲgwãrãmbiro*, Tu *potʔamsiro*, Me *kwãrã-piro* || Uk *kangwaruhu*, Pt *karugwaruhu* || Xi *bi*, Ju *baʔi* || Mg *jaiʔa* || Ma *ataj(d)* || Ka *jaba* || Pu *píta* || Kt *moroti* [(m)boroti] || (Ku ? Ak ?)

051-PACU FISH

Pt *pakuʔi*, Aw *paku*, Mw *paku*, Mu *pakó-dəp*, Wa *pako*, Me *paorap*, Xi *pakui*, Ju *pakuí*, Ka *pako* || Gv *bolíp kábeé*, Zo *bolíp kábe*, Su *moríp kábe*, Kt *ip toto* || Mg *ɲu jɲa* || Ku *isie* || Tu *kapa* || Ar *pade sépʔa* || Sa *bírβáʔaa* || (Uk ? Ma ? Ak ? Pu ?)

052-PAPAYA

Ar *póʔa*, *ibókʔa*, Gv *ibóðg-aá*, Zo *ibógaa*, Su *ibóga(a)* || Pt *mamáw*, Aw *momãw*, Mw *mamáw* || Ak *kipek* [kibek], Me *kibek* || Xi *jüpãjüpã*, Ju *jüpájüpa* || Pt *karandíβuhu* || Mu *asãw-ʔá* || Ku *mare* || Wa *koiro* || Ma *ɲgotkip* || Tu *ʔipe* || Ka *op* || Pu *makarã*, *makarã* || Sa *dólí.ã* || (Uk ? Kt ?)

053-PARROT

Ar *aβál-áp*, *aβál-ap*, Gv *aβálap*, Zo *aβálap*, Sa *βááloʔaa*, Su *awáár-aa* || Mu *aró*, Ku *aro*, Ka *aoro* || Mg *parakaw*, Uk *parawa* || Pt *ajuruhu*, Mw *ahut* || Ak *koʔa*, Me *koa* [kua] || Aw *apurit*, *napurit* || Wa *mãnti* || Ma *βarooja* || Tu *awro* || Xi *kurara* || Ju *kũrĩkũrĩ* || Pu *faramip* || Kt *ɲi* [(ɲ)gɲi] ||

054-PEACH PALM (PUPUNHA)

Ka *jomit*, Pu *jupikap*, Ar *jobat*, Gv *jobat*, Zo *jobat*, Su *jobára(a)* || Wa *tit*, Ma *ti(i)t*, Tu *sit* || Pt *hiriʔβa* || Mw *mirawe* || Mu *wesəðã-ʔá* || Ak *kiʔa* || Me *taapiro* || Kt *ɲõɲ mit* [bit] || (Mg ? Uk ? Aw ? Ku ? Xi ? Ju ? Sa ?)

055-PEANUT

Ka *makap*, Ar *mãkáp*, Gv *maa-káap*, Zo *makáap*, Sa *maakáap*, Su *makáp* || Mg *manduβi*, Uk *mundui*, Mw *amëduĩ*, Mu *amëndoĩ-da* || Wa *araagwi*, Ma *arawa*, Ak *arawi* [arakwi], Me *araakwi* || Pu *ẽʔëkap*, Kt *mĩʔi* || Aw *jupuʔi* || Tu *hirap* || Ju *kuʔi* || (Pt ? Ku ? Xi ?)



056-PECCARY (COLLARED)

Mw *hamaut sij*, Mu *dadze-ktjó*, Ku *ɬadeto*, Ma *tfaote.i*, Tu *hawteʔiri*, Ak *tawtʃe-tij*, Me *taotse nĩk*, Kt *soita pitat* [soʃʃa pitat] ||
 Ar *bebé-kot*, Gv *bebe-kot*, Zo *bebe-kot*, Sa *bebe (tĩk)*, Su *mebe-kot* || Mg *taʔitetu*, Pt *taitetu*, Aw *tatitu* ||
 Uk *makahi* || Wa *ŋgwãrã* || Xi *jãkũbi* || Ju *udú* || Ka *jaracewak* || Pu *apika*

057-PECCARY (WHITE-LIPPED)

Mw *hamaut*, *hamaur wato*, Mu *dɔdʒé*, *dadze*, Ku *ɬade(?)*, Ma *tfaote*, Ak *tawtʃe*, Me *taotse piik*, Ka *jate*,
 Kt *soitaati* [soʃʃaati] || Ar *bebe*, Gv *bebe*, Zo *bebe*, Su *mebe*, *mẽbe* || Mg *tahafu*, Uk *tajahu*, Pt *tajahu* || Xi *huza*,
 Ju *huɬá* || Aw *tatituwatu* || Wa *kopiit* || Tu *potʔa* || Pu *anẽwã*, *hãnewã* ||
 (Sa ?)

058-PEPPER

Ka *pejõ*, Ar *pějõ*, Gv *pějõ*, Zo *põjõ*, Sa *pĩjõ* Mg *kãʔãj*, Uk *kiʔin*, Pt *kiʔin* || Mu *aʃi-ʔá*, Wa *ati.a*, Ju *ʔaʔí* || Ak *pekõj*,
 Me *pekõj* || Aw *tsãpit* || Mw *muse* || Ma *kõjõ* || Tu *pajʔa* || Xi *pia* || Pu *makũjkap* || Su *homájuja*, *hómájuja* ||
 Kt *soj* [soʃ] ||
 (Ku ?)

059-PINEAPPLE

Uk *nana*, Mw *nana*, *anana*, Ka *anana* [anãnda], Gv *adadâat*, *ãdadâat* || Pt *juparapaʔri*, Ak *ãmpera*, *õmpera*, Me *jõpera* ||
 Wa *bakafi*, Ma *abakafi* || Ar *ɔzólómpʔa*, Zo *zólóvãã* || Mg *karaguataʔi* || Aw *kalahanj* || Mu *ípárá-ʔa* || Xi *arabafi* ||
 Ju *utũ*, *ũrí* || Su *karáb waa*, *ʔaráb wa* || Kt *koj pa* [koʃ pa] || (Ku ? Tu ? Pu ? Sa ?)

060-PIRANHA

Ma *ipjãj* [imjãj], Wa *ipnãj*, Tu *ʔijãj*, Ka *ihjãj*, Ar *ii-něj*, Gv *ii-jéèj*, Zo *ii-jéèj*, Sa *ĩ(j)ãjã*, Su *jéja*, Kt *isõj* || Mg *pirarãj*,
 Uk *pirahu*, Pt *piranuhũ*, Mw *pirãja*, Mu *pirãj-dəp* || Xi *pakĩ*, Ju *pakí* || Aw *pakãj* || Ku *mapiri* || Me *peni* || Pu *ʃibik* ||
 (Ak ?)

061-RAT

Tu *patop*, Me *patsop*, Pu *badop*, Ar *botop*, Gv *botop*, Zo *botop*, Sa *batop* || Mg *anguja*, Aw *takũjãʔit* || Mu *tãje* [tãje],
 Ku *tane* || Wa *ndjaɬaa*, Ma *tʃiʃaɬap* || Pt *kireru* || Mw *hapiri* || Ak *aninka* [ãniŋga] || Xi *tarara* || Ju *akuʔú* || Ka *məga* ||
 Su *ŋárúk* || Kt *mẽnẽhĩj*
 (Uk ?)

062-SCORPION

Ar *pátsãʔá(p)*, Gv *pátsã*, Zo *pásã*, Sa *pasã*, Su *paʔã* || Wa *kĩniñãʔ*, Tu *kwinika*, Me *kĩniñã* || Uk *jawajir*, Pt *jaʔgwajir* ||
 Mu *dat*, Ku *ɬat*, Ka *cat*, Pu *tat.tãnt* || Mg *jape(ɬ)ufa* || Aw *ajĩtatit* || Mw *sapoot* || Ma *tekito* || Ak *otatpomen* (?) ||
 Ju *uʔá hutá*, *ewiá* || Kt *kenõn* [kednõn] ||
 (Xi ?)

063-SLOTH

Uk *aʔihu*, Pt *ai(?)*, Mu *aj*, Ku (*h*)*aj*, Me *aj-atso*, Ka *aʔi*, Pu *aʔi*, Ar *alírʔ-a*, Gv *alí-a*, Zo *alí-a*, Sa *aalí-aa*, Su *árarí-aa*, Kt *oʔʔi* || Wa *aũnda*, *aũndza*, Ma *aona* [aonda] Mg *ateʔi* || Aw *oʔapewan* || Mw *urjukere* || Tu *awko* || Ak *ararita*, *orarita* || Xi *susue* || Ju *irianá* ||

064-SNAIL

Xi *arua*, Ka *waro*, Pu *taroʔa*, Ar *íí Bálóʔ-a*, Gv *Baló-ap*, Zo *Baló-a*, Sa *Baalóʔ-aa*, Su *koró-aa*, *óróó-aa* || Uk *uruwa*, Pt *hurugwaʔi* || Ma *tʔarea*, Me *aire* || Mg *eʔoʔi pe* || Aw *kitá* || Mw *mukureũ* || Mu *wareta da* || Tu *asiʔa* || Kt *nōtʔn* [nōrōn] || (Ku ? Wa ? Ak ? Ju ?)

065-SNAKE

Mg *mboi*, Uk *mboj*, Pt *mboja*, Aw *mōj*, Mw *moi*, Mu *pəj-bə*, Ku *pj*, Gv *baj*, Zo *baj* || Ar *jibó*, Sa *sobóó*, Su *ʔobóó*, Kt *mororɔa* [(m)borɔja] || Wa *ndat*, Ma *tʔat*, Tu *hat* || Xi *huta*, Ju *hutá* || Ka *mājgāra*, Pu *mājüp(m)* || Ak *watin* [kwatɪŋ] || Me *koripo* ||

066-SPIDER

Mg *nandu*, Uk *jandu*, Pt *nandu*, Aw *itātu*, Mw *kiä*, Ju *ʔiʔä*, *ʔiʔá* || Ar *géré-pää*, Gv *géré-pää*, Zo *géré-pää*, Sa *gét-pä*, Su *néér-pää* || Mu *dóá*, Ku *hoat* || Wa *mboʔ.tēm*, Ma *mbokoʔo* || Ak *kirito*, Me *kirito* || Tu *akirapapʔa* || Xi *puturu* || Ka *paramit* || Pu *fapekot* || Kt *nikisi* [(n)dikizi] ||

067-SPIDER MONKEY (MACACO PRETO)

Ma *arēmbó*, Tu *arime*, Me *arime*, Ar *alímé*, Gv *ālimé*, Zo *alimé*, Sa *alime*, Su *árimé*, Kt *ōtm* [ʔöröm] || Mu *dekó*, Ku *zeko*, Ka *cego pik*, Pu *feko* || Mg *kaʔi*, Uk *kaʔijarar* || Pt *aʔijouhu* || Aw *akikiwatu* || Mw *kuata* || Wa *mbokām* || Ak *taipik* || Xi *wara* || Ju *amíá* ||

068-SQUASH/PUMPKIN

Uk *jurumu*, Mw *jurumũ*, Ku *dʔoromó-ʔa*, Wa *dʔirimũ*, Ma *zirimũ*, Ka *cirimõ*, Sa *zirimõ* || Mu *kurua*, Tu *korota*, Xi *kuʔua*, Ju *kuruá* || Gv *kabéa*, Zo *kabéa* || Mg *andaj* || Pt *apirahi* || Aw *tezuʔapitek* || Ak *apenam* || Su *jokú(ú)ra* || Kt *pasi* || (Me ? Pu ? Ar ?)

069-SQUIRREL

Ar *baki-āk*, Gv *bájkít*, Zo *bájkít*, Sa *bajkit* || Pt *kutiʔuruhu*, Aw *kutsezeʔjít*, Mw *kutiere* || Wa *mātikijʔaʔ*, Tu *amsikijʔa* || Mg *tugwai pe* || Uk *akufipuru* || Mu *karaséŋ* || Ma *ʔirɪaj* || Ak *mākitakop* || Me *petsāk* || Ka *paraʔpaj* || Pu *warabaja* || Kt *oropon* [oropɔŋ] || (Ku ? Xi ? Ju ? Su ?)

070-STINGRAY

Aw *izipe*, Ar *ĩbeé*, Gv *iipeé*, Zo *ipee*, Sa *ípee*, Su *ípee* || Ma *tʃao*, Xi *jahu*, Ju *ʒahu*, Ka *jaw*, Pu *ii(j)aw* || Tu *tarapeʔĩ*, Ak *tʃara*, Me *sarap* || Mg *jaʒeβii*, Pt *jaʒeʔgwir* || Mw *piira peep ʔi* || Mu *íwáp-təp* || Ku *abarari* || Wa *eβo nĩk* || Kt *ō(ō)nĩ* (Uk ?)

071-SURUBIM FISH

Uk *suruwi*, Pt *huruβi*, Aw *tuzui*, Mw *surubĩ*, Mu *sorobĩ*, Xi *duʒufĩ*, Ju *durupĩ* || Ka *koran* [koradn], Pu *korare*, Ar *korele*, Gv *kolele*, Zo *kolere*, Su *korele* || Wa *ãnore*, Ma *ʔãnore* || Mg *manguruju* || Tu *wajnpa* || Kt *ipibij* [ʔipibij] || (Ku ? Ak ? Me ? Sa ?)

072-SWEET MANIOC

Mg *mandiʔo*, Pt *mandiʔog*, Mw *manisei*, Wa *manĩj*, Ma *mãnjĩ*, Tu *māj*, Ka *manĩ*, Pu *mijka* || Ar *paboʔa*, Gv *cíboðj-aá*, Zo *síbojaa*, Sa *paboʔá*, Su *mõj* || Mu *məsək-tá*, Ku *masik* || Ak *taptot*, Me *tapsi* || Xi *majaka*, Ju *majáká* || Uk *makaser* || Aw *titu* || Kt *ɲok* [(ɲ)gok] ||

073-SWEET POTATO

Mg *jeti*, Uk *jitik*, Pt *jitig*, Aw *tezik*, Mu *wefík-ʔa*, Ku *wedik* [wedʒik], *vidʒikʔa ikia*, Ar *βitĩʔa*, Gv *βitigã*, Zo *βetĩjaa jíʔ*, Sa *tĩʔa*, Su *watĩja* || Wa *βago tu.iʔ*, Tu *waore*, Ak *wako* [gwaku], Me *kwaako kĩp* || Xi *taũ*, Ju *atáú* || Mw *uriuru* || Ma *koβo* || Ka *peʔtik* || Kt *ohi koβot* [kowot] || (Pu ?)

074-TAPIR

Ar *βátsa*, Gv *βátsa*, Zo *βása*, Sa *βása*, Su *wáʔa* || Mg *tapiʔi*, Uk *tapiʔir*, Pt *tapiʔir*, Aw *tapiʔit* || Mw *wee-wato*, Wa *ʔikwaaj*, Ma *iatʃ* [ʔiaj(t)], Ak *iwaj* [ikwaj], Me *ikwaaj* || Mu *bío*, Ku *bio* || Tu *takara* || Xi *masaka* || Ju *tuwá* || Ka *naʔto* || Pu *tã(ã)ni* || Kt *itp* [ʔirip]

075-TAYRA

Mg *eira*, Uk *eira* (?), Pt *heirar*, Aw *(n)ekizak*, Tu *ewitkat*, Ka *ei* || Pu *wata*, Gv *aβat*, Zo *áβar-áàp*, Sa *ááβat*, Su *warwára* || Wa *amãná*, Ma *ãmãn.nã* || Mw *awiato asap* || Me *kwepiik-atso* || Ju *waránãná* || Kt *õmaki* *ẽẽm* [õmbaki] || (Mu ? Ku ? Ak ? Xi ? Ar?)

076-TERMITE

Mg *kupiʔi*, Uk *kupiʔi*, Pt *kupiʔi*, *kupiʔa*, Aw *kupiʔi*, *kupiʔa*, Mw *nupiʔa*, Wa *ɲgi.i*, Ma *ɲgoβaʔ*, Tu *kopʔi*, Ak *kopi*, Me *kobi*, Xi *kupa*, Ju *kupá*, Ar *gósóʔaá*, Gv *góóβaá*, Zo *góóβaa*, Sa *gópʔa*, Kt *ɲip* [(ɲ)gip] || Mu *ifíwá-ʔa* || Ka *najúa* || Pu *uuju murũm(p)* || Su *ʔodám-ɲĩr* (Ku ?)

077-TICK

Mg *jateβu*, Uk *jeteuk*, Pt *jateβug*, Aw *tētewut*, Ma *wewat* || Mu *poro da*, Ku *puriw* || Tu *kiperep*, Me *perep* ||
Xi *kupāčémã*, Ju *kupáíí* || Wa *ɲupiʔa*, *ɲipiʔa* || Ma *neeroo* || Ak *kipita* || Ka *magopi* || Pu *tapiʔjia* || Su *ɲarkip* ||
Kt *ororop* [ororoɟ]
(Ar ? Gv ? Zo ? Sa ?)

078-TIMBÓ LIANA

Mg *timbo*, Uk *Jimbo*, Pt *timbo*, Ma *tij*, Tu *nij*, Kt *tij* || Gv *dajap tápòd*, Zo *dajap tapóa*, Su *márkab napó* || Aw *tuj* ||
Mw *uuku* || Mu *komə-pí* || Wa *mbĩɲ* || Me *kiměëpo* || Ju *utá* || Ka *napok*, *atĩɲ* || Pu *dabi*, *dabə* || Ar *íbokáíí* ||
(Ku ? Ak ? Xi ? Sa ?)

079-TINAMOU

Ar *βājá(á)*, Gv *βāājáá*, Zo *βājáá*, Sa *βājáá*, Su *wajáá* || Mg *(i)nambu*, Uk *inamutō*, Pt *inambu* || Wa *kwamã*,
Me *kwamã*, *kwāp*, Kt *pōm* || Xi *tũčũčũ*, Ju *nāĩĩĩ* || Mw *urítʔi* || Mu *firi* || Ku *urupunã* || Ma *mokira* || Tu *kokoʔa* ||
Ka *pecía* || Pu *foap* ||
(Aw ? Ak ?)

080-TOAD

Mg *kururu*, Uk *kururu*, Pt *kururu*, Aw *kuzuzu*, Xi *kududu*, Ju *kududú*, Kt *kiririt* || Wa *ɲgwaraaɟ*, Ma *kaaj*, Me *kwaraaj* ||
Tu *korokorojʔa*, Zo *kórój-aa*, Su *korój-aa* || Mu *kórékóré*, Ku *korekore* || Ar *βaajʔ-a*, Gv *βáàj-aá* || Mw *waʔasa* ||
Ka *miririj* || Pu *gia hiija* ||
(Ak ? Sa ?)

081-TOBACCO

Mg *petĩ*, Uk *pitim*, Aw *pe*, Mu *e*, Ku *(h)elip*, Wa *pitoap*, Ma *mbiti.a*, Ak *pitoa*, Me *pitoa*, Xi *pitima*, Ju *pitĩmã*, Pu *peta* ||
Ar *māco*, Gv *máco*, Zo *máfo*, Sa *máfo*, Su *máfo*, *máfo penéma* || Pt *-mohatatĩhaβ* || Mw *suhu puʔi* || Tu *kipe* ||
Ka *carogĩn* ||
(Kt ?)

082-TORTOISE

Wa *mboga*, Tu *pokʔa* [ɸo(k/g)ʔa], Ak *poka* [puga], Me *poga*, Ka *móa* [mbóá], Ar *amóʔ-a*, *amóʔ-aá*, Gv *amó-a*,
Zo *amó-a*, Sa *amóʔ-ãã*, Su *amóó-aa*, *amõ-aa* || Uk *jafi*, Pt *jaβoti*, Mw *wawori* || Mu *pój*, Ku *poj* || Xi *takurace*,
Ju *takuráré* || Mg *karumbe* || Aw *tarapek* || Ma *mbiako* || Pu *tabeβira* || Kt *miip sōm* [(m)biip] ||

083-TOUCAN

Mg *tukã*, Uk *tukan*, Pt *tukan*, Mw *jũkan*, Mu *tjókõn*, Ma *nõkãn*, Tu *jõkan*, Ka *jokãn*, Pu *jokãnt*, Ar *jókãát*, *jokãát*,
Gv *jókãát*, Zo *jókãát*, Sa *jókát*, Su *jokán-áp*, Kt *neokõn* [dʒeokõn] || Ku *anãdari*, Xi *jãdadaɽi*, Ju *jadadarí* ||
Ak *jowet* [ɲũgwet], Me *siokwet* || Aw *kujawka* || Wa *pãnoaa* ||

084-TRAHIRA FISH

Wa *mbirija*, *mbiridza*, Ma *mbiri.a*, Tu *siri?a*, Ak *pirita*, Me *piritsa* || Mg *tare?i*, Uk *tere?ir*, Mw *tara?ira* || Mu *dafé*, Ku *ɬafui* || Xi *fiti*, Ju *pití* || Ka *paro*, Pu *barawa* || Zo *booboo*, Su *maabóó* || Pt *pirauhu* || Aw *(n)ipiuta* || Kt *mira* [(m)ira] || (Ar ? Gv ? Sa ?)

085-TUCUMĀ PALM

Ar *malój*, *malój?a*, Gv *māilóó*, Zo *māilóó* || Ak *akatapa*, Me *akara*, Kt *okōrā*, *akōrā* || Uk *tukumā* || Pt *ipeipe* || Aw *mato* || Mw *tawara* || Mu *ʔodzó-da* || Wa *tii* || Ma *orokōne* || Tu *pot?aŋ* [φor?āŋ] || Ka *ʔōn ʔōn* || Pu *ari?a* || Su *jóbaj* || (Mg ? Ku ? Xi ? Ju ? Sa ?)

086-VULTURE

Pt *hurubu*, Aw *uzuapirit*, Mw *uruwu*, Mu *oropó*, Ku *oropo*, Tu *orop?o*, Xi *kuzuhu*, Ju *uhú* || Wa *iBekoop*, Ma *?iekoo*, Ak *ieko*, Me *ieko* || Ar *jakó*, Gv *mājākóó*, Zo *mājākóó* || Mg *fapirē* || Uk *karakara* || Ka *cibekon* [cibekodn] || Pu *kujmarā*, *kujmarā* || Su *ójkóó* || Kt *akiri* || (Sa ?)

087-WASP

Mg *kaβi*, Uk *ka*, Pt *kaβa*, Aw *kap*, Mw *ŋap*, Wa *ŋgap*, Ma *ŋgap*, Tu *kap*, Ak *kap*, Me *kap*, Xi *kapa*, Ju *kapá*, Ar *gap*, Gv *gap*, Zo *gap*, Sa *gap*, Su *ŋap*, Kt *ŋop* [(ŋ)gop] || Ka *nāp*, Pu *daba.i* || Mu *ikopí* || (Ku ?)

088-WILD CAT

Uk *marakaja*, Pt *mbarakaja?i*, Mw *marakaha* || Tu *ameko hīin*, Me *ameko tsīit*, Ka *ameko ?ibíríp*, Ar *nekó it*, Gv *nekó kíp*, Zo *neko kíp*, Sa *mekó?-it*, Su *mekó-ii*, Kt *ōmakí ññā* [ōmbakí] || Mg *jīβi?i* || Aw *oli?oli* || Mu *iporó* || Ku *pusiβo* || Wa *uri* || Ma *βarirei* || Xi *pijāra* || Pu *purufint* || (Ju ?)

089-WILD DOG

Ar *beráá*, Gv *beeráà*, Zo *beeráà*, Sa *beeráá*, Su *meeráá* || Wa *amēŋko*, Ma *amēŋkwirāj*, Tu *amēko mērā*, Me *amēko* ('dog') || Uk *jawaran*, *jawaruwi*, Pt *ŋaŋwatin* || Xi *api mamā*, Ju *api iwamāwamā* || Mg *gwarí* || Aw *(n)ekizak* || Mw *awahuru* || Ku *ʔoara* || Ka *magojapan* || Pu *ōěj?ap* || Kt *ŋiri?i* [(ŋ)giri?i] || (Mu ? Ak ?)

090-WOODPECKER

Mg *(i)pekū*, Pt *ipeku?i*, Aw *ipeŋ*, Kt *iripān* || Ar *dzérép?-a*, Zo *séreb-aa*, Su *térew-aa* || Xi *waŋe*, Ju *wárí* || Uk *arapasu* || Mw *samā* || Mu *ʔip-wéró* || Wa *maōrō?ó* || Ma *ndoromā* || Tu *siperāto* || Ak *pawro* || Me *sikarāpe* || Ka *ciwere* || Pu *panīwa* || Gv *kere?ip* || (Ku ? Sa ?)